









ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

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"ANIMAL KEEPERS' FORUM" IS A NON-PROFIT MONTHLY PUBLICATION DISTRIBUTED TO PROFESSIONAL ZOO KEEPERS INDEPENDENTLY, AND BY THE AMERICAN ASSOCIATION OF ZOO KEEPERS AS A SERVICE TO ITS MEMBERS. "ANIMAL KEEPERS' FORUM" INCLUDES NEWS AND OFFICIAL ANNOUNCEMENTS OF THE AMERICAN ASSOCIATION OF ZOO KEEPERS.

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WORLD'S OLDEST CAPTIVE GORILLA CELEBRATES 45TH BIRTHDAY

MASSA, THE WORLD'S OLDEST CAPTIVE GORILLA, CELEBRATED HIS 45TH BIRTHDAY AND THE 40TH ANNIVERSARY OF HIS ARRIVAL AT THE PHILADELPHIA ZOO ON TUESDAY, DECEMBER 30.

MASSA (MEANING "BIG BOSS"), A LOWLAND GORILLA, WAS BORN SOMETIME IN 1931 IN THE REMOTE JUNGLES OF WESTERN AFRICA. AFTER HIS MOTHER WAS SLAIN WHILE RAIDING VILLAGE CROPS, HE WAS RAISED BY SYMPATHETIC NATIVES. HE WAS THEN SOLD TO A SEA CAPTAIN WHO IN TURN SOLD HIM TO MRS. GERTRUDE LINTZ, A DEVOTED ANIMAL LOVER WHO SPECIALIZED IN REARING BABY PRIMATES. MRS. LINTZ ALSO OWNED GARGANTUA WHO BECAME THE FAMOUS CIRCUS GORILLA. MASSA AND GARGANTUA WERE PLAYMATES.

ONE DAY, MASSA, THEN WEIGHING MORE THAN 100 POUNDS, WAS INADVERTENTLY SURPRISED BY HIS SURROGATE MOTHER WHILE HE WAS SCRUBBING THE KITCHEN FLOOR. THE FRIGHTENED ANIMAL ATTACKED MRS. LINTZ SO SEVERELY THAT SHE DECIDED RELUCTANTLY TO GIVE HIM UP. ON DECEMBER 30, 1935, SHE BROUGHT HIM TO THE PHILADELPHIA ZOO WHERE HE HAS LIVED IN THE MONKEY AND APE HOUSE EVER SINCE. HE WAS ORIGINALLY THOUGHT TO BE A FEMALE BUT WAS FOUND TO BE A MALE SHORTLY AFTER HIS ARRIVAL AT THE ZOO. HE WAS INTRODUCED TO ANOTHER MALE GORILLA NAMED BAMBOO, BUT THEY FOUGHT AND WERE SEPARATED.

RECOGNIZING THE FACT THAT BAMBOO, THE ZOO'S FORMER RECORD-HOLDING GORILLA, DIED OF A HEART ATTACK (AT AGE 34), ZOO OFFICIALS HAVE KEPT MASSA SLIM (HE NOW WEIGHS APPROXIMATELY 300 POUNDS) AND HIS DIET WELL BALANCED. HIS CAREFULLY CONTROLLED DIET IS LARGELY RESPONSIBLE FOR HIS LONGEVITY. A TYPICAL DAILY DIET INCLUDES SIX ORANGES, TWO CARROTS, TWO BUNCHES OF KALE, A HALF HEAD OF CABBAGE, AND TWO POUNDS OF ZOO CAKE (THE ZOO'S OWN FORMULA COMPLETE WITH ALL THE VITAMINS, MINERALS, AND PROTEINS NECESSARY FOR GOOD NUTRITION).

MASSA'S GENERALLY HEALTHY CONDITION IS ALSO RESPONSIBLE FOR HIS EXCELLENT RECOVERY FROM A SERIES OF OPERATIONS PERFORMED IN 1969. HE WAS SUFFERING FROM INFECTED SINUSES, A CONDITION WITH WHICH MANY CITY RESIDENTS ARE VERY FAMILIAR.

MASSA IS ONE OF THE PHILADELPHIA ZOO'S THREE LONGEVITY RECORD-HOLDING GREAT APES. THE OTHER TWO ARE SUMATRAN ORANG-UTANS, GUAS AND GUARINA, AGE 55, THE WORLD'S OLDEST CAPTIVE PRIMATES.



American Association of Zoo Keepers
635 Gage Boulevard
Topeka, Kansas 66606

R. MARLIN PERKINS CERTIFICATE OF EXCELLENCE

AAZK PROUDLY ANNOUNCES THAT IT'S 1975 "R. MARLIN PERKINS CERTIFICATE OF EXCELLENCE" HAS BEEN AWARDED TO JOHN WOLF, LONG TIME ANIMAL KEEPER AT THE SAN FRANCISCO ZOOLOGICAL GARDENS.

WOULD YOU BELIEVE "HUSHPUPPIES" FOR AN ELEPHANT? WELL, THAT'S WHAT BROUGHT JOHN TO OUR ATTENTION. LAST APRIL ONE OF THE ELEPHANTS AT THE SAN FRANCISCO ZOO WAS SUFFERING FROM FISTULOUS TRACTS IN ALL FOUR FEET. DURING ATTEMPTS TO ARRIVE AT A MEANS OF RELIEVING THE CONDITION, A SET OF BOOTS WAS SUGGESTED BUT DISCARDED.

ACCORDING TO ASSISTANT HEAD KEEPER JOE RUSK, JOHN PICKED UP ON THE IDEA, LOCATED A SANDAL MAKER CRAZY ENOUGH TO TRY, AND VOLUNTEERED TO PAY FOR THE VENTURE--SOME \$600--OUT OF HIS OWN POCKET. SOON THE ANIMAL WAS FITTED OUT WITH A SET OF BOOTS OF TOP GRADE COWHIDE, SPORTING STAINLESS STEEL LACES, DOUBLE THICKNESS SOLE LEATHER AND NEOPRENE SOLES. PACKED WITH LAYERED COTTON AND ANTISEPTIC IODINE, THE BOOTS DID THE TRICK. AFTER SIX WEEKS' WEAR, JOHN TOOK THE BOOTS OFF AND THE ELEPHANT WAS WELL ON HER WAY TO RECOVERY.

IN HIS LETTER, JOE RUSK SAYS "MR. JOHN WOLF SHOWED THE KIND OF CONCERN, INITIATIVE AND TO NO SMALL EXTENT COURAGE, IN THIS PURSUIT--"

WE CONGRATULATE JOHN WOLF AND WISH HIM WELL.

CHAPTER COORDINATOR NAMED

APPOINTED TO FILL THE NEWLY CREATED POST OF "COORDINATOR FOR CHAPTER AFFAIRS" IS DENNIS GRIMM OF THE CHICAGO ZOOLOGICAL PARK, BROOKFIELD. LONG AN ACTIVE MEMBER OF THE BROOKFIELD CHAPTER, DENNIS SERVES AS THEIR EXECUTIVE SECRETARY. HE HAS BEEN A MOVING FORCE IN THE CHAPTER AND HAS BEEN INSTRUMENTAL IN ASSISTING IN THE FORMATION OF A NUMBER OF NEWER CHAPTERS.

ANY QUESTIONS CONCERNING CHAPTERS AND THEIR FORMATION MAY BE DIRECTED TO DENNIS GRIMM, c/o BROOKFIELD ZOO, BROOKFIELD, ILLNOIS 60513.

COGITATIONS ON WILD ANIMAL HUSBANDRY (PART II) BY C.H. KEELING,
WORTHING, ENGLAND

AS I POINTED OUT SOME CONSIDERABLE TIME AGO IN AN ARTICLE I WROTE FOR THE NOW (UNFORTUNATELY) DEFUNCT "KEEPERS VOICE", STAFF BULLETIN AT THE SAN FRANCISCO ZOOLOGICAL GARDEN, I BEGAN PONDERING DEEPLY WHEN I WAS KEEPING RABBITS AND CAVIES AND MICE AS A SMALL BOY. AS A KEEN YOUNG NATURALIST I KNEW MY PETS HAD TO BE CLEANED OUT REGULARLY FOR THE SAKE OF THEIR HEALTH, AND THAT THEIR DIET SHOULD BE BOTH VARIED AND CAREFULLY PLANNED, YET THEY FELL ILL AND DIED WITH DISCOURAGING REGULARITY. NEXT DOOR THE BOY KEPT RABBITS, TOO, WHICH HE FED ON ODDS AND ENDS WHEN HE THOUGHT HE WOULD AND CLEANED THEM OUT ONLY WHEN THE NEIGHBORHOOD OBJECTED - AND THEY LIVED LONG HAPPY LIVES WITH NEVER A DAY'S ILLNESS. IT MADE ME THINK....

YEARS LATER I WAS PRIVATE TUTOR TO TWO CHILDREN OF A WEALTHY FAMILY. THEY SHOULD HAVE BEEN AS FIT AS FIGHTING COCKS: IN THOSE DAYS (LATE NINETEEN FORTIES) WHEN FOOD WAS STILL RATIONED AND IN SHORT SUPPLY IN ENGLAND THEY WERE FED ON CHOPS AND STEAKS AND CHICKEN AND FRESH FRUIT AND VEGETABLES; THEY HAD MULTIPLE VITAMIN PREPARATIONS THROUGHOUT THE WINTER AND THEIR DAILY MENUS WERE ALWAYS CAREFULLY PLANNED BY THE COOK. THEY WENT TO BED EARLY, HAD LONG MUSCLE-BUILDING WALKS EACH AFTERNOON AND SPENT LONG HOLIDAYS EACH YEAR TO REBUILD WEARY TISSUES - AND THEY FELL ILL IF THE WIND CHANGED DIRECTION. ON THE OTHER HAND THE CHILDREN IN THE NEARBY VILLAGE HAD TO MAKE DO WITH A DIET FAR TOO RICH IN CARBOHYDRATES, SLEPT GOODNESS KNOWS HOW MANY TO A ROOM, MADE THEMSELVES SCARCE WHEN BATH-TIME CAME ROUND, ATE DISGUSTING LOOKING THINGS THEY PICKED UP IN THE MEADOWS AND HEDGEROWS, IGNORED CUTS AND GRAZES WHICH IN THEORY SHOULD HAVE TURNED SEPTIC - AND NEVER KNEW A DAY'S ILLNESS. AGAIN, IT MADE ME THINK.....

FROM CHILDHOOD I VISITED EVERY ANIMAL COLLECTION I COULD, BOTH PUBLIC AND PRIVATELY OWNED, AND, OVER THE YEARS, NOTED A MOST SIGNIFICANT POINT. THE PLACES WHERE THE ANIMALS WERE IN REALLY TOP-NOTCH HEALTH WERE NEVER QUITE AS CLEAN AS THOSE WHERE HYGIENE AND CLEANLINESS FOR THE SAKE OF CLEANLINESS WERE THE ORDER OF THE DAY - THIS STATE OF AFFAIRS CROPPED UP FAR TOO FREQUENTLY TO BE A COINCIDENCE. (AT THIS JUNCTURE IT COULD PERHAPS BE MEDITATED THAT HYGIENE IS UTTERLY AND COMPLETELY UNNATURAL.) PLEASE DO NOT MISUNDERSTAND ME; AS A SCIENTIST I DO NOT USE WORDS LIGHTLY, AND WHEN I SAY "NOT QUITE AS CLEAN" I DO NOT MEAN FILTHY, BUT AS A RESULT OF EXPERIMENTS I HAVE MADE OVER THE YEARS I HAVE ARRIVED AT THE CONCLUSION THAT AN ENORMOUS RANGE OF CAPTIVE SPECIES WHICH ARE CLEANED OUT, SAY, EVERY THIRD DAY, ARE USUALLY BETTER LOOKING THAN THOSE METICULOUSLY

ATTENDED TO DAILY. FOR ONE THING, THEY APPEAR TO HAVE WHAT MIGHT BE CALLED MORE "BLOOM" ON THEM, AND THEY SEEM MORE SOLIDLY BUILT, TOO. OBVIOUSLY, CERTAIN SPECIES WHICH VOID PARTICULARLY COPIOUS FECES, LIKE CATTLE OR NECTAR-EATING PARROTS, COULD NOT BE KEPT IN THIS WAY, AND IN ANY CASE THE PUBLIC HEALTH AUTHORITIES WOULD POUNCE IF A PUBLIC COLLECTION WAS NOT KEPT PERFECTLY CLEAN, BUT IT IS WORTH NOTING THAT AT THE ASHOVER ZOOLOGICAL GARDENS WE USED TO BREAK EVERY RULE IN THE BOOK, AND BOASTED THE LOWEST DEATH RATE IN ANY BRITISH COLLECTION - THAT AMONG THE VERTEBRATES BEING 5.5% PER ANNUM.

A LONG LIST COULD BE MADE OF THE GREAT DIRECTORS OF ZOOLOGICAL GARDENS WHO HAVE DEVOUTLY MAINTAINED THAT MOST SPECIES DO BETTER AND LIVE LONGER IF KEPT IN COMPARATIVELY SMALL CAGES AND PADDOCKS, RATHER THAN THE LARGE BOGUS NATURAL ENCLOSURES SO POPULAR NOWADAYS AND, LET US FACE IT, LARGELY THERE PARTLY AS A SOP TO POPULAR DEMAND AND PARTLY TO IMPRESS OTHER ZOOLOGICAL GARDENS. THE WHYS AND WHEREFORES OF THIS ARE TOO INVOLVED TO BE GONE INTO HERE, BUT SUFFICE TO SAY THAT I CONSIDER THE DEMOLITION A FEW YEARS AGO OF THE OLD ANTELOPE HOUSE TO BE ONE OF THE MOST RETROGRADE STEPS EVER TAKEN BY THE ZOOLOGICAL SOCIETY OF LONDON. THIS WAS A WONDERFUL PLACE FOR ARTIODACTYLAR UNGULATES AND NATURALIST ALIKE; FROM THE LATTER'S POINT OF VIEW EVERY HAIR ON EVERY BODY COULD BE SEEN AT CLOSE QUARTERS, WHILE FOR THE FORMER THERE WERE SMALL SNUG DENS, THICK WALLS WHICH ALWAYS SEEM TO GIVE A FEELING OF SECURITY, WARMTH (MANY PEOPLE TODAY SEEM TO FORGET THAT ANIMALS FROM THE TROPICS LIKE WARMTH WHEN KEPT IN NORTHERLY LATITUDES) AND OUTDOOR PADDOCKS OF SENSIBLE SIZE. THEY LIVED AND BRED WELL HERE, BESIDES SETTING UP SEVERAL LONGEVITY RECORDS. WHILE ON THIS LATTER THEME, IT MIGHT BE WORTH POINTING OUT THAT A STAGGERING NUMBER OF WORLD LONGEVITY RECORDS FOR WILD ANIMALS IN CONFINEMENT WERE SET UP DURING THE LAST THREE DECADES OF THE NINETEENTH CENTURY, AND IT IS A LITTLE KNOWN - INDEED ALMOST CONCEALED - FACT THAT THE PLACE WHICH HOLDS MORE SUCH RECORDS THAN ANY OTHER IS THE MUCH MALIGNED JARDIN DES PLANTES IN PARIS, WHERE MANY OF THE ANIMALS ARE STILL HOUSED IN WHAT LOOK LIKE DUNGEONS FROM THE PAST. IT IS NOT A BEAUTIFUL SPOT, THERE IS MUCH THERE WITH WHICH I DISAGREE, BUT THIS IS THE PLACE TO SPEND A MONTH OR TWO IF YOU WANT TO LEARN HOW TO KEEP WILD ANIMALS PROPERLY FOR A VERY LONG TIME: SOMETHING WHICH ALWAYS IMPRESSES ME HERE IS THE HAPPY RELATIONSHIP BETWEEN KEEPER AND CHARGE. IT COULD, INCIDENTALLY, BE WORTH MENTIONING THAT THE AMERICAN ZOOLOGICAL GARDEN WITH THE MOST LONGEVITY RECORDS IS PHILADELPHIA - AND I AM SURE YOU DO NOT NEED AN ENGLISHMAN TO REMIND YOU THAT THIS IS THE OLDEST SUCH PLACE IN THE STATES.

I COULD GO ON AND ON. TODAY WE DO NOT CONSIDER THE MOOSE ONE OF THE EASIEST SPECIES TO KEEP, YET DURING THE SEVENTEENTH CENTURY THE SWEDES KEPT AND TRAINED IT AS A RIDING ANIMAL, RED DEER WERE SOMETIMES TRAINED TO DRAW CARRIAGES HERE IN ENGLAND AT ABOUT THE SAME TIME, WHILE A NORWEGIAN, OLAUS MAGNUS, HAS RECORDED SOMETHING ALMOST UNBELIEVABLE ABOUT THE BROWN BEAR. NOT ONLY WAS IT ONCE TRAINED TO HARNESS, PULLING LADEN SLEDGES, BUT AT THE END OF THE JOURNEY IT WOULD UNLOAD THE BOXES AND BALES AND STACK THEM INTO PILES. AS I SAID EARLIER, ARE WE LOSING THE ART OF KEEPING WILD ANIMALS?

THE SPECTRUM OF DEATH BY GARY K. CLARKE, DIRECTOR TOPEKA ZOOLOGICAL PARK

DEATH IS A PART OF LIFE.

ANYONE WHO WORKS WITH LIVING ANIMALS OVER A PERIOD OF TIME WILL EXPERIENCE DEATH AS A MATTER OF COURSE. DURING MY YOUTH VARIOUS PEOPLE IN THE NEIGHBORHOOD WOULD BRING TO ME ORPHANED, SICK OR INJURED WILD ANIMALS. SOME OF THEM SURVIVED WITH TREATMENT AND CARE, BUT MANY OF THEM DIED.

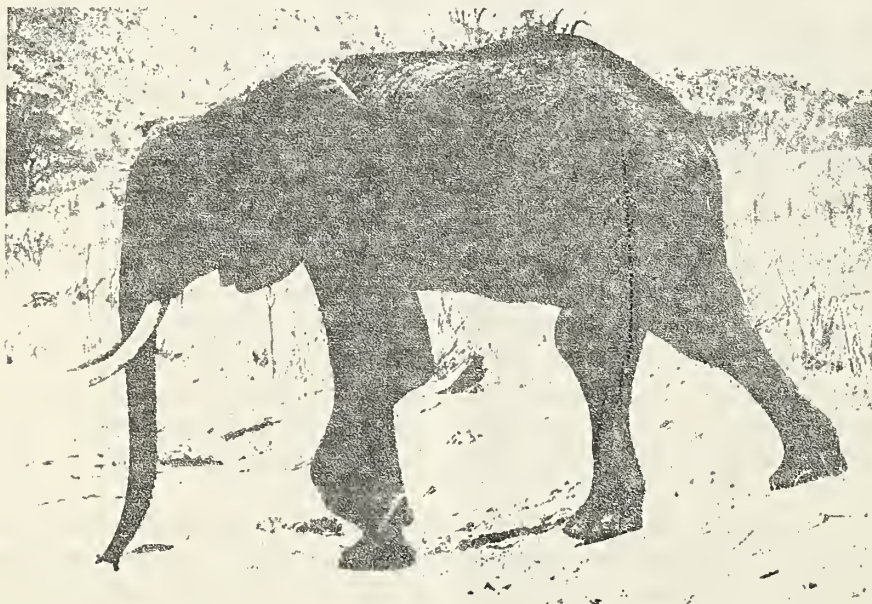
DURING MY EIGHTEEN YEARS IN THE ZOO PROFESSION, DEATH HAS BEEN ONE OF THE MOST ABSOLUTE OF REALITIES. AS A BEGINNING KEEPER, I CARED FOR A NEWBORN CAMEL THAT WAS WEAK FROM BIRTH AND SOON DIED OF CONGENITAL DEFECTS; THIS WAS VERY HARD TO ACCEPT. MY MOST DIFFICULT DECISION AS A ZOO DIRECTOR INVOLVED A ZEBRA WITH A BROKEN LEG. AFTER THOROUGH EVALUATION BY VETERINARIANS, CONSULTATION WITH EQUINE SPECIALISTS, AND MUCH SOUL SEARCHING, I DECIDED THAT EUTHANASIA WAS THE ONLY HUMANE COURSE OF ACTION.

WHILE ON SAFARI IN AFRICA IN 1974 I ALSO SAW DEATH IN THE NATURAL STATE. SOME ANIMALS HAD BEEN KILLED BY PREDATORS, SOME WERE VICTIMS OF DROUGHT, AND SOME, OF COURSE, WERE KILLED BY POACHERS. I CAN SWALLOW HARD AND ACCEPT ALL OF THE ABOVE INSTANCES OF DEATH. BUT I CANNOT ACCEPT DEATH AS I WITNESSED IT IN AFRICA IN THE FALL OF 1975.

IT WAS NOT SIMPLY A QUESTION OF A FEW POACHED ANIMALS, OR LACK OF RAIN IN TSAVO NATIONAL PARK--IT WAS A MATTER OF THE ENTIRE ENVIRONMENT DYING.

THE SADDEST DAY OF MY LIFE BEGAN AT SUNRISE WHEN WE SPOTTED THE CARCASS OF AN ELEPHANT THAT HAD DIED OVERNIGHT JUST OUTSIDE OUR LODGE. AS WE STARTED OUR GAME RUN INTO TSAVO WEST, WE NOTICED THAT IN JUST ONE YEAR THE PARK HAD LITERALLY TURNED INTO A DESERT. WE LEARNED THAT THE WORST KIND OF DESTRUCTION WAS TAKING PLACE--POACHERS WERE SNEAKING IN AT NIGHT AND CUTTING DOWN THE FOREST TO BE PROCESSED INTO CHARCOAL. THUS, THE ANIMALS' FOOD SOURCE AND HABITAT IS BEING DESTROYED ON A MASSIVE SCALE. RHINOS ARE EATING THE INADEQUATE VEGETATION THAT IS LEFT. THEN, WHEN THEY DRINK, WATER CAUSES THIS VEGETATION TO BLOAT AND BECOME IMPACTED, KILLING THE ANIMAL. THIS YEAR WE COUNTED NINE DEAD RHINOS IN A ROW IN WHAT IS NOW A VALLEY OF DEATH. IN FACT, WE SAW MORE DEAD THAN LIVE RHINOS.

THE ELEPHANTS HAVE BEEN DRIVEN TO THE POINT WHERE THEY HAVE COMPLETELY DESTROYED THE HUGE, ANCIENT BAOBAB TREES. IN THEIR DESPERATE ATTEMPTS FOR SURVIVAL, THE SOCIAL STRUCTURE OF THE HERD HAS BEEN LOST AND WE SAW MANY YOUNG ANIMALS WANDERING ALONE IN THE BUSH SEARCHING FOR FOOD. IT IS A TRAGIC SIGHT TO SEE THESE MAGNIFICENT ANIMALS THIN AND GAUNT,



STARVING YOUNG ELEPHANT WANDERING ALONE IN SEARCH OF FOOD. TSAVO WEST NATIONAL PARK, KENYA. (PHOTO BY GARY K. CLARKE)

NOT EVEN FLAPPING THEIR EARS.

SUCH AN EXPERIENCE LEAVES ONE FEELING VERY EMPTY AND HELPLESS.

WHAT CAN BE DONE?

WHAT CAN I DO?

WHAT CAN YOU DO?

PERSONALLY, I AM CONVINCED THAT THE MOST MEANINGFUL COURSE OF ACTION IS TO SUPPORT THE EAST AFRICAN WILD LIFE SOCIETY AS MUCH AS YOU POSSIBLY CAN. THE SOCIETY, FOUNDED IN 1961, IS A NON-PROFIT, NON-GOVERNMENTAL AGENCY, ASSISTING THE THREE EAST AFRICAN REPUBLICS OF KENYA, UGANDA AND TANZANIA, IN THE WORK OF CONSERVATION AND DEVELOPMENT OF THE WILDLIFE IN THE REGION.

OVER THREE HUNDRED SEPARATE CONSERVATION ACTIVITIES HAVE BEEN UNDERTAKEN AND COMPLETED BY AND ON THE SOCIETY'S INITIATIVE. IT IS WORTH NOTING THAT EVERY CENT OF SUBSCRIPTIONS AND DONATIONS TO THE SOCIETY GO DIRECTLY INTO CONSERVATION PROJECTS, AND NONE OF THIS MONEY IS USED FOR OVERHEAD, SALARIES OR ADMINISTRATIVE COSTS. BASICALLY THE WORK DONE BY THE SOCIETY FALLS INTO FOUR CATEGORIES; EDUCATION, ANIMAL RESCUE, ANTI-POACHING AND RESEARCH. EACH OF THESE CATEGORIES LIST NUMEROUS PROJECTS UNDERTAKEN BY SPECIALISTS IN THEIR RESPECTIVE FIELDS.

MEMBERSHIP IS ONLY \$10.00 A YEAR. THIS INCLUDES A YEAR'S SUBSCRIPTION TO AFRICANA, THE QUARTERLY WILDLIFE MAGAZINE OF EAST AFRICA, AND AN OUTSTANDING PUBLICATION. THE SOCIETY ALSO OFFERS A WIDE VARIETY OF PRINTS, WILDLIFE JEWELRY, TIES, CAR AND BLAZER BADGES, GREETING CARDS, POST CARDS, CALENDARS AND BOOKS. THEIR ADDRESS IS:

EAST AFRICAN WILD LIFE SOCIETY
P.O. Box 20110
NAIROBI, KENYA - EAST AFRICA

I URGE YOU TO JOIN TODAY.

A DATE TO REMEMBER IS MARCH 21, 1976 AS IT MARKS THE START OF THE 41ST NORTH AMERICAN WILDLIFE AND NATURAL RESOURCES CONFERENCE. THE CONFERENCE REPRESENTS ONE OF THE MOST PRESTIGIOUS GATHERINGS OF CONSERVATIONISTS IN NORTH AMERICA. THE CONFERENCE CONCLUDES ON MARCH 25TH AND IS BEING HELD AT THE WASHINGTON HILTON HOTEL IN WASHINGTON D.C.. INFORMATION MAY BE OBTAINED BY WRITING: WILDLIFE MANAGEMENT INSTITUTE, 1000 VERMONT AVE., N.W. 709 WIRE BLDG., WASHINGTON, D.C. 20005.

OF VETERINARIANS AND KEEPERS

BY MIKE STOSKOPF, D.V.M., OVERTON
PARK ZOO AND AQUARIUM, MEMPHIS, TN

LAST MONTH WE DISCUSSED THE TWO SEPARATE MECHANISMS OF THE IMMUNE RESPONSE WHICH AN ANIMALS' BODY USES TO DEFEND ITSELF FROM DISEASE. IT WAS STATED THAT THE MAJOR PROBLEM AN ANIMAL FACES IS THE DELAY IN GETTING ITS DEFENSES INTO ACTION WHEN CHALLENGED BY A DISEASE ORGANISM, AND THIS IS WHERE VACCINATIONS COME INTO PLAY. THE ARTICLE LEFT OFF WITH THE UNDERSTANDING THAT VACCINES IMITATE THE ANTIGENS OF DISEASE PRODUCING ORGANISMS AND IN A SENSE PROVIDE TARGET PRACTICE FOR THE LYMPHNODES AND BLOOD CELLS. WE WERE ALSO LEFT WITH SOME QUESTIONS.

WHAT CAN AFFECT THE RESPONSE OF AN ANIMAL TO A VACCINE?

WHY ARE THERE DIFFERENT VACCINES FOR THE SAME DISEASE?

WHY DO WE NEED TO GIVE BOOSTERS?

AN ANIMALS' RESPONSE TO A VACCINE IS DEPENDENT UPON MOBILIZING ITS IMMUNE FORCES IN AN ATTACK UPON THE SYNTHETIC PATHOGEN WHICH MAKES UP THE VACCINE. ANY FACTOR WHICH WILL ENHANCE OR DETRACT FROM THIS PROCESS WILL AFFECT THE DEGREE OF IMMUNITY THE ANIMAL ACHIEVES. ANIMALS WHICH ARE ACTIVELY FIGHTING OFF A TRUE DISEASE WILL RESPOND LESS WELL TO A VACCINE SIMPLY DUE TO EXHAUSTION OF THE IMMUNE MECHANISM. THERE WILL BE AN EFFORT MADE TO DEFEND AGAINST THE VACCINE BUT MOST OF THE RESPONSE WILL BE MOBILIZED AGAINST THE EXISTING DISEASE. ANIMALS IN POOR CONDITION, ESPECIALLY WHEN HYPOPROTEINEMIA IS PRESENT, WILL FAIL TO RESPOND. THIS IS DUE TO A LACK OF RAW MATERIALS WITH WHICH TO BUILD IMMUNE PRECURSORS. STRESSES DUE TO POORLY DESIGNED HOLDING FACILITIES CAN EVEN DECREASE RESPONSE TO A VACCINE BY CAUSING THE EXCESS PRODUCTION OF STEROIDS BY THE ADRENAL CORTEX. STEROIDS DEPRESS THE IMMUNE MECHANISM SEVERELY. BEST RESPONSE TO A VACCINE THEN, CAN BE EXPECTED IN HEALTHY, WELL FED AND UNSTRESSED ANIMALS.

DIFFERENT VACCINES FOR THE SAME DISEASE EXIST FOR TWO DIFFERENT REASONS. THE FIRST IS THAT DIFFERENT COMPANIES USE DIFFERENT STRAINS OF ORGANISMS TO PRODUCE THEIR VACCINES. THE SECOND IS THE DIFFERENCE BETWEEN LIVE AND KILLED VACCINES. KILLED VACCINES CONSIST OF A NUMBER OF PATHOGENIC ORGANISMS KILLED AND FIXED IN EITHER FORMALIN OR PHENOLS. IT IS THESE TWO COMPOUNDS WHICH PRODUCES THE STING OF A VACCINE. THERE ARE A NUMBER OF ADVANTAGES TO THE USE OF THIS TYPE OF VACCINE. FIRST THERE IS NO CHANCE OF ACCIDENTALLY TRANSMITTING THE DISEASE. THE PATHOGEN IS DEAD. SECONDLY, STORAGE OF THE VACCINE IS LESS CRITICAL. (CON'T NEXT PAGE)

ON THE MINUS SIDE HOWEVER, WOULD BE THE STING OF THE SHOT. ALSO A KILLED VACCINE TRANSMITS NO IMMEDIATE CELL BLOCK. A LIVE VACCINE WILL ENTER CELLS AND BEGIN A DEGREE OF PROTECTION IMMEDIATELY, WHILE KILLED VACCINES REQUIRE TWO WEEKS TO CONFER ANY SIGNIFICANT IMMUNITY. LASTLY SINCE THE ORGANISMS OF A KILLED VACCINE CANNOT REPLICATE IN THE BODY MORE ANTIGENS MUST BE INJECTED. THIS INCREASES THE PROBABILITY OF AN ALLERGIC REACTION TO THE VACCINES WHICH COULD BE FATAL.

MODIFIED LIVE VACCINES ARE PRODUCED BY CAUSING A PATHOGEN TO MUTATE TO A HARMLESS FORM BY GROWING IT IN UNFAMILIAR MEDIA. THE TRICK IS TO MAKE IT HARMLESS BUT TO RETAIN THE SAME ANTIGENIC STRUCTURES. THERE ARE EXCELLENT REASONS TO USE EITHER TYPE OF VACCINE.

A BOOSTER SHOT IS NOTHING MORE THAN A REVACCINATION. AFTER A PERIOD OF TIME WITH NO CONTACT WITH AN ANTIGEN THE IMMUNE SYSTEM BEGINS TO QUIT PRODUCING A DEFENSE AGAINST IT. FOR THIS REASON REVACCINATION IS NECESSARY IN ANIMALS NOT IN EVERYDAY CONTACT WITH THE DISEASE ITSELF. THIS IS CALLED A BOOSTER.

BROOKFIELD ZOO'S 1976 CALENDAR IS NOW AVAILABLE. THE FULL-COLOR CALENDAR FEATURES PICTURES TAKEN BY BROOKFIELD ZOO STAFF WHILE DOING FIELD WORK OR ON SAFARI IN AFRICA. IT IS AVAILABLE AT THE ZOO BOOKSTORE FOR \$3.25 OR THROUGH THE MAIL FOR \$4.00. CHECKS ARE PAYABLE TO BROOKFIELD ZOO 1976 CALENDAR. THEY MAY BE SENT TO BROOKFIELD ZOO 1976 CALENDAR, DEVELOPMENT DEPARTMENT, BROOKFIELD ZOO, BROOKFIELD, ILL. 60513.

A LOSS TO THE PROFESSION

WE ARE SORRY TO HEAR OF THE DEATH OF GUSTAV PIEPENBURG FORMALLY OF THE MILWAUKEE COUNTY ZOOLOGICAL PARK. MR. PIEPENBURG PASSED AWAY SUDDENLY ON NOVEMBER 28. HE WORKED AT THE ZOO FOR 10 YEARS, PRIMARILY IN THE HOOFED-STOCK COMPLEX. MR. PIEPENBURG WAS A LONG TIME MEMBER OF AAZK AND THE MILWAUKEE CHAPTER. HE WILL BE GREATLY MISSED BY MEMBERS AND HIS FELLOW WORKERS.

ANIMALS, INCORPORATED BY TOM GOLDSBERRY, PORTLAND ZOO, PORTLAND, OREGON

UNCLE SAM IS DETERMINED TO GET INTO THE ZOO BUSINESS. AS IF H.R. 6631 AND H.R. 70 WEREN'T ENOUGH, ALONG COMES H.R. 4373 (DERWINSKI, D., ILL.).

H.R. 4373 HAS A DIFFERENT APPROACH TO THE APPARENTLY NAGGING QUESTION OF HOW THE GOVERNMENT AND THE ANTI-ZOO GROUPS CAN GAIN CONTROL OF ZOOS AND AQUARIUMS. THIS TIME THE GIMMICK IS THE CREATION OF A NATIONAL ZOOLOGICAL AND AQUARIUM CORPORATION UNDER THE SMOKESCREEN OF "PROVIDING ASSISTANCE" TO SAID ZOOS AND AQUARIUMS.

KEEPERS CAN VIEW THIS ONE WITH MIXED BLESSINGS. WE WOULD BE FREE (SO FAR) OF THE \$100.00 EXTORTION FEE AS WAS PROVIDED FOR IN PAST BILLS, BUT, WE WOULD STILL NOT BE REPRESENTED ON THE MEMBERSHIP BOARD EITHER, EVEN THOUGH IT'S OUR PROFESSION THEY'RE KICKING AROUND.

EVEN THE PROPOSED MEMBERSHIP BOARD (OR BOARD OF DIRECTORS AS IT WOULD NOW BE KNOWN AS) WOULD HAVE A DIFFERENT TWIST. THERE WOULD BE A SIX-TEEN MEMBER BOARD WITH THE USUAL COMPLEMENT OF ANTI AND PRO ZOO PEOPLE, BUT NOW THE COMPTROLLER GENERAL OF THE UNITED STATES AND THE DEPARTMENT OF STATE WOULD GET INTO THE ACT. FOURTEEN OF THE INDIVIDUALS WOULD BE APPOINTED BY THE PRESIDENT, "TO SERVE AT THE PLEASURE" OF THE PRESIDENT; THUS, IT DOESN'T TAKE TOO MUCH IMAGINATION TO SEE THE MANAGEMENT AND OPERATION OF ZOOS AND AQUARIUMS BECOME JUST ONE MORE POLITICAL FOOTBALL WITH THE USUAL CORRESPONDING DECREASE IN PROFESSIONALISM AS EVIDENCED BY MANY SIMILAR RUN GOVERNMENT AGENCIES.

SHOVELLING ALL THE LEGALESE AND POLITICAL PLATITUDES WE FIND THE UNDERLYING SENTIMENT OF THE ENTIRE BILL IS BASED ON THE SAME OLD "CATCH-22", THAT EACH ZOO AND AQUARIUM WOULD HAVE TO MEET ACCREDITATION STANDARDS ESTABLISHED UNDER H.R. 4373. THIS IS THE OLD "STICK AND CARROT" PHILOSOPHY HONED TO PERFECTION: WE DO WHAT THEY SAY, THEY THROW US A BONE.

MATTER OF FACT, THE SO-CALLED ACCREDITATION STANDARDS AREN'T EVEN DEFINED IN THE BILL. DOES THIS MEAN THAT ACCREDITATION STANDARDS HAVE ALREADY BEEN SET AND ARE JUST WAITING FOR IMPLEMENTATION? OR, DOES IT MEAN THAT PROPONENTS OF H.R. 4373, IN THEIR HYSTERIA TO RAM THE BILL THROUGH, HAVE PUT THE CART BEFORE THE HORSE AND ARE DETERMINED TO GET THE BILL PASSED AT ANY COST REGARDLESS OF FUTURE CONSEQUENCES TO THE ZOO INDUSTRY? PERHAPS SOME LAWMAKER IS WAITING FOR THE RIGHT PARLIAMENTARY JUNCTURE TO TACK ON AN AMENDMENT DELINEATING THE SO-CALLED "ACCREDITATION STANDARDS".

HOW DOES ALL OF THIS EFFECT THE WORKADAY KEEPER? IT'S HARD TO SAY AT THIS POINT BUT, ANY PIECE OF LEGISLATION THAT IS BACKED BY THE "HUMANIACS" AND OTHER ANTI-ZOO FORCES WITH THEIR VAST FINANCIAL RESOURCES IS BOUND TO HAVE A PROFOUND EFFECT ON ALL OF US IF AND WHEN IT'S ENACTED.

LETTER TO THE EDITOR

IN READING THE NOVEMBER NEWSLETTER, I WAS DISMAYED AT THE INCREASE IN HYBRID BIRTHS OCCURRING IN ZOOS.

WHY, IN A PROFESSION SUCH AS THE CARE OF WILD ANIMALS IN CAPTIVITY, EXPERIMENT? IF THESE PROFESSIONALS WANT TO PRESERVE WILDLIFE, DO IT BY INTENSIVE EDUCATION OF THE PUBLIC. EXPERIMENTATION ON WILDLIFE BY ZOOS SHOULD STOP. IN MOST ZOOS, IN THIS COUNTRY, HYBRIDIZATION IS NOT AN ENCOURAGED PRACTICE. HOWEVER, HYBRIDS ARE BEING CREATED EVERY YEAR, AND FOR WHAT PURPOSE? WHY ARE SUCH ANIMALS CREATED IN CAPTIVITY, WHEN THEY DON'T EXIST IN THE WILD STATE?

EACH TIME A ZOO ANNOUNCES ANOTHER HYBRID BIRTH, I WONDER WHAT GOOD IS THIS NEW CREATURE? IS THIS ANIMAL A NEW CALLING CARD FOR A ZOO TRYING TO INCREASE ATTENDANCE TO THEIR ZOO BY HAVING MORE ODDITIES THAN ANOTHER ZOO? WILL THIS ANIMAL BENEFIT IN THIS NEW FORM? ZOOS SHOULDN'T BE USED AS CIRCUSES OR FREAK SHOWS TO SHOW THE RESULTS OF MAN'S EXPERIMENTATION. WHY EDUCATE THE PUBLIC ABOUT SUCH ANIMALS, WHEN THESE SPECIES DON'T EXIST IN THE WILD?

EDUCATING THE PUBLIC SHOULD BE THE MOST IMPORTANT OBJECTIVE IN ZOOS. IF, THE CARE OF WILDLIFE IS TO REMAIN PROFESSIONAL, THEN HYBRIDIZATION SHOULD BECOME A THING OF THE PAST. LET'S CONTINUE TO EDUCATE THE PUBLIC ABOUT ANIMALS THAT DO EXIST IN THE WILD STATE, AND HELP TO KEEP THEM THERE. "NATURE" HAS CREATED ANIMALS IN THE MOST SUITABLE FORM FOR SURVIVAL; MAN IS AGAIN UPSETTING THE DELICATE BALANCE OF NATURE.

MICHAEL D. COKER
MANHATTAN, KANSAS

ANIMAL NUTRITION

BY DR. RICHARD S. PATTON, DIRECTOR
OF PROFESSIONAL EDUCATION, MARK
MORRIS ASSOCIATES, TOPEKA, KS.

Q. THERE ALWAYS SEEMS TO BE CONFUSION ABOUT VITAMIN D AND ITS VARIOUS FORMS. COULD YOU EXPLAIN THIS?

A. A NUMBER OF COMPOUNDS SHOW VITAMIN D ACTIVITY. THE TWO MOST IMPORTANT ARE WHAT WE CALL D₂ FROM PLANTS, AND D₃ FROM ANIMALS. MANY NAMES HAVE BEEN USED IN THE PAST FOR THESE TWO VITAMINS AND THEIR ACTIVE AND NON-ACTIVE FORMS. NOT TO BORE YOU WITH TRIVIA, BUT SIMPLY TO SET THE RECORD STRAIGHT, THE OFFICIAL TERMS ARE: 7-DEHYDROCHOLESTEROL IS TRANSFORMED BY UV LIGHT TO CHOLECALIFEROL (D₃). THIS OCCURS IN THE SKIN. ERGOCALCIFEROL IS FROM PLANTS AND IS CALLED D₂.

VITAMIN D IS NEEDED BY ALL ANIMALS WITH A BONY SKELETON. MANY ANIMALS CAN USE D₃ OR D₂. SOME MUST HAVE D₃. POULTRY ARE KNOWN TO BE UNABLE TO USE D₂, HENCE NEEDING D₃ EXCLUSIVELY, AND MARMOSETS ARE THOUGHT TO ALSO NEED D₃ EXCLUSIVELY.

VITAMIN D IS, OF COURSE, INDISPENSIBLE FOR ITS ROLE IN THE PREVENTION OF RICKETS, A DISEASE OF BONES BROUGHT ON BY POOR MINERALIZATION. VITAMIN D PROMOTES THE ABSORPTION OF CALCIUM FROM THE GUT, MAKING MORE OF THIS ELEMENT AVAILABLE TO THE BODY FOR BONE BUILDING.

IT USED TO BE EASY TO DEVELOP A VITAMIN D DEFICIENCY BECAUSE NATURAL SOURCES ARE LIMITED AND IN TEMPERATE ZONES, SUNLIGHT (UV) CAN ALSO BE LIMITED. MANY COMMERCIAL FOODS ARE NOW FORTIFIED AND THE RACHITIC CHILD IS TRULY RARE.

AT THE PRESENT TIME D₂ COSTS AS MUCH OR MORE THAN D₃. BECAUSE D₃ WORKS FOR ALL CREATURES, IT IS THE ONLY FORM YOU NEED TO BE CONCERNED WITH.

COD LIVER OIL IS A VERY GOOD NATURAL SOURCE OF D₃. ALL COD LIVER OIL PREPARATIONS ARE STANDARDIZED TO PROVIDE 85 I.U./GRAM OR 340 I.U./TEASPOON. THERE ALSO ARE AVAILABLE WATER-MISCIBLE FORMS. IN HOOFSTOCK, GOOD LEAFY HAY IS AN IDEAL PREVENTATIVE FOR THIS VITAMIN DEFICIENCY. OFTEN, THOUGH, HAY QUALITY IS A CONCERN. UNDER THESE CIRCUMSTANCES, BE CERTAIN TO FEED TO YOUNG STOCK A CONCENTRATE (SWEET FEED, TO USE THE VERNACULAR OF THE KEEPER) THAT CONTAINS AT LEAST 500 I.U. OF D₃ PER POUND.

FROM THE AKF STAFF

WELCOME TO A NEW YEAR WITH AKF. WE WOULD LIKE TO TAKE THIS OPPORTUNITY TO THANK EVERYONE WHO HAS SUPPORTED THIS EFFORT. WE WOULD ALSO LIKE TO EXTEND A SPECIAL THANKS TO DR. RICHARD PATTON OF MARK MORRIS ASSOCIATES TOPEKA; JERRY HOUGHLAN OF ZUPREME; GARY CLARKE, DIRECTOR OF THE TOPEKA ZOOLOGICAL PARK; DR. MIKE STOSKOPF, MEMPHIS, TN.; DR. STUART PORTER, BROWNSVILLE, TX.; LINDA WEISS AND PERRY LABELLE, ST. PAUL, MN.; THE MINNESOTA ZOOLOGICAL SOCIETY; AND THE TOPEKA FRIENDS OF THE ZOO.

WE ARE ALSO INDEBTED TO THE MANY CONTRIBUTORS OF NEWS ITEMS AND ARTICLES AND WE ENCOURAGE EVERYONE TO CONTINUE WITH THIS TYPE OF PARTICIPATION.

THE COMPETENT AND HUMBLE AKF STAFF DESERVES A PAT ON THE BACK ALSO. THIS NEWSLETTER IS COMPILED, EDITED, TYPED, LAYED-OUT, PRINTED, COLLATED, FOLDED, STAPLED, ADDRESSED, AND MAILED BY A FEW VOLUNTEER HANDS. THESE PEOPLE HANDLED ABOUT 37,000 SHEETS OF PAPER OVER THE PAST YEAR PUTTING OUT APPROXIMATELY 7,200 NEWSLETTERS.

WE ARE STARTING A NEW YEAR WITH A NEW APPEARANCE. THE 1976 FORMAT FOR AKF WILL ALLOW AN INCREASE IN THE AMOUNT OF NEWS WE CAN PRINT WITHOUT INCREASING THE COST. THE CHANGE IN PAPER QUALITY AND NEW POSTAGE RATES WILL CAUSE A SLIGHT INCREASE IN OUR COST BUT THESE INCREASES WILL NOT BE PASSED ON TO YOU. HOWEVER, YOU CAN HELP US ABSORB THESE ADDED EXPENSES BY ENCOURAGING YOUR FRIENDS AND CO-WORKERS TO JOIN AAZK. A LARGER MEMBERSHIP WOULD ALLOW US TO PROVIDE BETTER MEMBERSHIP SERVICES TO EVERYONE. IF EACH MEMBER COULD CONVINCE ONE FRIEND TO JOIN, AAZK WOULD DOUBLE IN SIZE.

IF YOU HAVE NOT RENEWED YOUR MEMBERSHIP YET, PLEASE DO SO IMMEDIATELY. WE CAN SAVE MUCH MONEY BY BUYING OUR PRINTING SUPPLIES IN BULK. A YEARS' SUPPLY OF PAPER REQUIRES A SIZABLE AMOUNT OF CAPITAL. YOUR PROMPT RENEWALS WILL GIVE US THIS NEEDED MONEY TO PURCHASE THE SUPPLIES FOR THE COMING YEAR.

WE LOOK FORWARD TO SERVING YOU TO THE BEST OF OUR ABILITY DURING 1976. IF YOU HAVE ANY SUGGESTIONS FOR IMPROVING THE NEWSLETTER WE WOULD BE PLEASED TO HEAR FROM YOU. BEST WISHES FOR A HAPPY YEAR AHEAD, FROM THE AKF STAFF.

* AAZK SHOULDER PATCHES ARE AVAILABLE FROM NATIONAL *
* HEADQUARTERS FOR \$1.00 EACH. ORDER YOURS SOON!! *

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DEDICATED TO PROFESSIONAL ANIMAL CARE

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QUESTIONS FOR DR. PATTON'S NUTRITION COLUMN SHOULD
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WORLD'S OLDEST RARE PRIMATE DIES

GUARINA, ONE OF THE TWO OLDEST ORANG-UTANS IN CAPTIVITY IN THE WORLD, IS DEAD AT THE AGE OF 56.

PHILADELPHIA ZOO SENIOR VETERINARIAN DR. WILBUR B. AMAND EUTHANIZED GUARINA ON FRIDAY, JANUARY 16, WHEN IT BECAME OBVIOUS THAT MEDICAL TREATMENT WAS HAVING NO SUBSTANTIAL EFFECT ON THE ORANG-UTAN'S DETERIORATING CONDITION. AN AUTOPSY PERFORMED BY DR. ROBERT L. SNYDER, DIRECTOR OF THE ZOO'S PENROSE RESEARCH LABORATORY, REVEALED THAT GUARINA WAS SUFFERING FROM ARTERIAL NEPHROSCLEROSIS (A FORM OF KIDNEY FAILURE CAUSED BY HARDENING OF THE ORGAN'S ARTERIES) AND EMPHYSEMA.

DR. AMAND SAID GUARINA SHOWED SIGNS OF ILLNESS ON DECEMBER 31 WITH OCCASIONAL COUGHING, LUNG CONGESTION, AND A DECREASED APPETITE. SHE SEEMED TO RALLY FOR SEVERAL DAYS AND THEN DECLINED AGAIN ON JANUARY 8.

GUARINA WAS REMOVED FROM HER MATE, GUAS, THE OTHER LONGEVITY RECORD-HOLDER, AND PLACED IN ISOLATION FOR FURTHER TESTS AND TREATMENT. SHE WAS TAKEN UNDER MEDICATION TO THE VETERINARY HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA FOR FURTHER EXAMINATION, X-RAYS, AND ELECTROCARDIOGRAMS UNDER THE SUPERVISION OF DR. AMAND AND THE ZOO'S VETERINARY STAFF.

DEATH SEEMED IMMINENT LATE IN THE AFTERNOON OF JANUARY 12, SHE WAS GIVEN INTRAVENOUS FLUIDS AND OTHER SUPPORTIVE MEDICATION IN ATTEMPTS TO SAVE HER LIFE.

GUARINA AND HER MATE GUAS CAME TO THE PHILADELPHIA ZOO ON MAY 1, 1931, FROM THE PRIVATE COLLECTION OF THE LATE MADAME ROSALIA ABREU OF QUINTA PALATINO, HAVANA, CUBA, A WOMAN WHO DEVOTED MUCH OF HER LIFE TO KEEPING AND BREEDING PRIMATES IN CAPTIVITY.

FORMER CURATOR OF MAMMALS FREDERICK A. ULMER PREVIOUSLY ESTIMATED BOTH GUARINA AND GUAS TO HAVE BEEN TEN YEARS OLD WHEN THEY ARRIVED AND THEIR YEAR OF BIRTH TO BE 1919.

MUCH OF THE CREDIT FOR THE LONGEVITY RECORDS OF GUARINA AND GUAS (AS WELL AS MASSA, THE WORLD'S OLDEST CAPTIVE GORILLA AT AGE 45 AND OTHER LONG-LIVED ANIMALS AT THE ZOO) CAN BE ATTRIBUTED TO TWO BASIC INNOVATIONS DEVELOPED BY THE PHILADELPHIA ZOO'S PENROSE RESEARCH LABORATORY.

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FIRST, ALL THE PRIMATE ENCLOSURES WERE EQUIPPED WITH GLASS FRONTS IN 1930 TO PROTECT THE ANIMALS FROM RESPIRATORY DISEASES, AND IN PARTICULAR, TUBERCULOSIS.

SECONDLY, SCIENTIFICALLY DEVELOPED DIETS -- HIGH PROTEIN, LOW FAT -- WERE INTRODUCED IN 1935 BY DR. HERBERT RATCLIFFE, NOW DIRECTOR EMERITUS OF THE PENROSE LABORATORY. THE WORLD-FAMOUS PHILADELPHIA "ZOO-CAKE" WAS (AND IS TODAY) A COMPOSITE RATION OF VARIOUS GRAINS, MINERALS, AND VITAMINS COMPRESSED INTO A CAKE FORM. THE BASIC DIET WAS SUPPLEMENTED WITH FRESH FRUIT AND VEGETABLES.

WORLD'S OLDEST CAPTIVE MANDRILL DIES

THE WORLD'S OLDEST CAPTIVE MANDRILL DIED ON DECEMBER 1, 1975 AT THE PHILADELPHIA ZOO. THE 31-YEAR, 5-MONTH-OLD-FEMALE WAS BORN AT THE PHILADELPHIA ZOO ON JUNE 29, 1944. SHE EXCEEDED THE PREVIOUS KNOWN LONGEVITY RECORD BY SEVERAL YEARS.

ACCORDING TO DR. ROBERT L. SNYDER, DIRECTOR OF THE ZOO'S PENROSE RESEARCH LABORATORY, THE MANDRILL DIED OF CANCER ORIGINATING IN THE KIDNEY.

THE PHILADELPHIA ZOO BOASTS TWO LONGEVITY RECORD-HOLDING GREAT APES IN ITS COLLECTION. THEY ARE: 45-YEAR-OLD LOWLAND GORILLA, MASSA, AND A 55-YEAR-OLD SUMATRAN ORANG-UTAN, GUAS.

BROOKFIELD ZOO GETS NEW DIRECTOR

GEORGE RABB, 46, OF BROOKFIELD, HAS BEEN ELECTED DIRECTOR OF BROOKFIELD ZOO AND PRESIDENT OF THE CHICAGO ZOOLOGICAL SOCIETY. HE SUCCEEDS DR. PETER CROWCROFT, WHO LAST SUMMER ANNOUNCED HIS RESIGNATION TO HEAD TARONGA PARK ZOO IN SYDNEY, AUSTRALIA.

DR. RABB CAME TO BROOKFIELD ZOO IN 1956, AND HAS SERVED AS THE PARK'S DEPUTY DIRECTOR FOR SEVEN YEARS. DR. RABB WAS BORN IN CHARLESTON, SOUTH CAROLINA. HE EARNED HIS BACHELOR OF SCIENCE DEGREE AT THE COLLEGE OF CHARLESTON AND HIS DOCTORATE WORK WAS DONE AT THE UNIVERSITY OF MICHIGAN.



American Association of Zoo Keepers
635 Gage Boulevard
Topeka, Kansas 66606

A MESSAGE FROM THE PRESIDENT OF THE A.A.Z.K.

AS THE NEW YEAR BEGINS, I WOULD LIKE TO CONGRATULATE THE AKF STAFF FOR THE FINE QUALITY OF OUR MONTHLY PERIODICAL. THERE IS NO DOUBT THAT WE NEED MORE INPUT FROM OUR MEMBERS TO CONTINUE MAKING THIS NEWSLETTER ONE OF THE BEST PUBLICATIONS PERTAINING TO THE CARE AND HANDLING OF CAPTIVE ANIMALS. I WOULD LIKE TO ALSO CONGRATULATE THE NEWLY ELECTED BOARD OF DIRECTORS AND I AM SURE THEY WILL INDIVIDUALLY HELP THE CAUSES AND PURPOSES OF THE AAZK.

I WOULD ALSO LIKE TO PERSONALLY THANK ALL THE NEW CHAPTERS THAT JOINED US LAST YEAR AND WISH THEM THE BEST OF LUCK. HOPE YOU CAN JOIN ALL OF US IN SAN DIEGO IN AUGUST.

FINALLY, I WOULD PUT OUT THIS THOUGHT TO THE BOARD OF DIRECTORS. IT BEHOOVES EACH AND EVERY ONE OF YOU TO COMMUNICATE WITH EACH OTHER TO FIND OUT WHAT IS GOING ON IN THE ORGANIZATION. DON'T JUST SIT BACK AND LET SOMEONE ELSE DO THE WORK. YOU ALL MUST BE A VIABLE WORKING BOARD, FOR YOU ACCEPTED THE ASSIGNMENTS AND NOW YOU MUST CARRY THEM OUT. SO LET'S GET CRACKING, THE WORK IS IMPORTANT, DON'T SLOUGH IT OFF.

I SINCERELY HOPE THAT EACH AND EVERY MEMBER, THEIR FAMILIES AND LOVED ONES HAVE A FINE, HEALTHY, PROSPEROUS NEW YEAR AND THAT AAZK MOVES FORWARD TO GREATER HEIGHTS OF ACHIEVEMENT.

Ed. Roberts

AAZK SHOULDER PATCHES ARE AVAILABLE TO MEMBERS ONLY FROM
NATIONAL HEADQUARTERS FOR \$1.00 EACH. ORDER YOURS SOON!

ANIMALS YOU SHOULDN'T OWN BY DR. MICHAEL W. FOX

REMEMBER THOSE HEROIC TALES OF A BOY-IN-THE-WILD WHOSE LIFE IS SAVED BY A COUGAR, WOLF OR EAGLE HE HAS BEFRIENDED? FROM CHILDHOOD ON, OUR HEADS ARE CRAMMED WITH STORIES ABOUT WILD CREATURES—MOST OF THEM UNTRUE. MOVIES AND TV ROMANTICIZE THEM; PEOPLE IN THE ENTERTAINMENT WORLD GAIN STATUS AND ATTENTION BY OWNING THEM; FOOTBALL TEAMS HAVE THEM AS MASCOTS. ADD TO THIS OUR NATIONAL OBSESSION FOR TRYING WHATEVER IS NEW AND DIFFERENT, AND IT IS LITTLE WONDER THAT THE OWNERSHIP OF THESE ANIMALS IS INCREASING BY LEAPS AND BOUNDS.

THE LIST OF WILD ANIMALS FOR SALE TODAY READS LIKE THE INVENTORY FROM NOAH'S ARK: PARROTS, FALCONS, TROPICAL FISH, TURTLES, TARANTULAS, LIZARDS, SKUNKS, THE CUBS OF LION AND FOX AND WOLFF AND BOBCAT, AND ALL KINDS OF MONKEYS FROM SQUIRREL MONDEY TO CAPUCHIN. EACH ONE HAS ITS OWN DISTINCTIVE QUALITIES—IT IS RARE, EXOTIC, BEAUTIFUL, DANGEROUS—THUS SATISFYING THE TASTES OF ALL MANNER OF OWNERS.

ESPECIALLY IN THE SPRING, THERE WILL BE MORE WILD ANIMALS THAN EVER FOR SALE. AS YOU THINK TO THE YEAR AHEAD, BE FOREWARNED. IT IS VERY SAD BUT MOST PEOPLE WILL HAVE TO GIVE UP THEIR WILD PETS. WHY? BASICALLY, BECAUSE THESE ANIMALS HAVE NOT BEEN DOMESTICATED. THEY'RE UNPREDICTABLE: A CHEETAH IN NEW YORK MUTILATED A BABY'S FEET — THE INFANT'S BOOTEES WERE OF RABBIT FUR. A FEMALE WOLF NEARLY KILLED ITS HANDLER IN COLORADO; THE "PET" HAD JUST GIVEN BIRTH TO A LITTER OF CUBS, AND THE HANDLER DIDN'T KNOW ENOUGH TO STAY OUT OF THE CAGE. A FILM STAR WAS MAULED BY A LION THAT WAS ALARMED BY SOME MOBILE CAMERA EQUIPMENT. A WRITER LOST HER HAND WHILE FONDLING A "PET" RACCOON; ANOTHER HAD TO DESTROY HER COYOTE WHEN IT WENT CRAZY FOR NO APPARENT REASON.

I COULD GO ON AND ON WITH SUCH STORIES, BUT THEY ALL TELL US THE SAME THING: WILD ANIMALS DO NOT MAKE PETS. KEEPING ONE OFTEN ENDS IN TRAGEDY—FOR THE OWNER, FOR OTHER INNOCENT VICTIMS AND FOR THE ANIMALS THEMSELVES, WHO MUST ULTIMATELY BE DONATED TO A ZOO OR, MORE OFTEN, BE DESTROYED. BEING TAME AND BEING DOMESTICATED ARE QUITE DIFFERENT. A WILD ANIMAL CAN BE TAMED SO THAT IT LOSES ITS FEAR OF MAN AND BECOMES RELATIVELY SOCIALIZED—BUT A DOMESTIC ANIMAL IS ALL OF THESE THINGS AS WELL AS GENETICALLY SUITED TO FIT INTO A HUMAN'S DOMESTIC WORLD. DOGS AND CATS HAVE BEEN DOMESTICATED FOR 10,000 AND 6,000 YEARS RESPECTIVELY. IT'S TAKEN THAT LONG FOR THEIR DOCILITY AND STABLE TEMPERAMENT TO EVOLVE.

EVEN WHEN HAND-RAISED FROM INFANCY, WILD ANIMALS ARE UNPREDICTABLE AND HARD TO TRAIN. TRUE, AN ANIMAL SUCH AS THE WOLF HAS AN INBORN TENDENCY TO RESPOND TO A LEADER, AND SINCE IT SOMETIMES SEES ITS HUMAN MASTER AS THIS

LEADER, IT MAY BE EASILY CONTROLLED. OR A NATURAL MOTHER-INFANT BOND MAY BE FORMED IF THE OWNER TAKES ON THE PARENTAL ROLE WHEN AN ANIMAL IS STILL VERY YOUNG. IF IN THE WILD THE ANIMAL NORMALLY KEEPS A CLOSE BOND WITH ITS PARENTS EVEN AS AN ADULT, THEN IT MIGHT REMAIN ATTACHED TO ITS HUMAN FOSTER PARENT. BUT MOST WILD SPECIES OF REPTILE, BIRD AND MAMMAL BREAK WITH THEIR PARENTS—OFTEN WITH SOME CONFLICT AND AGGRESSION—BEFORE MATURITY. THUS THE PRIMARY SOCIAL BOND WITH THE HUMAN FOSTER PARENT IS EVENTUALLY BROKEN (BY RACCOONS, FOXES AND MOST WILD-CAT SPECIES) AND DOES NOT ENDURE AS IT DOES WITH MORE GREGARIOUS SPECIES, SUCH AS THE WOLF OR RHESUS MONKEY.

ANOTHER COMPLICATION IS THAT THE INFANT MAY BECOME SEXUALLY ATTACHED TO ITS FOSTER PARENT, EVENTUALLY LEADING TO CONSIDERABLE CONFUSION AND CONFLICT.

IT'S DIFFICULT TO PROVIDE A WILD PET WITH ITS SPECIAL DIETARY REQUIREMENTS. AND WHAT HAPPENS IF THE ANIMAL GETS SICK? LITTLE IS KNOWN ABOUT THE DISEASES OF WILD ANIMALS. I'VE SEEN MONKEYS CRIPPLED BY INADEQUATE DIETS AND WILD ANIMALS WITH A TUBERCULARLIKE DISEASE THAT CAN INFECT THEIR OWNERS. IN FACT, THERE ARE A NUMBER OF SERIOUS DISEASES THAT HUMANS CAN GET FROM WILD ANIMALS. THE SALE OF LITTLE TERRAPINS OR TURTLES HAS RECENTLY BEEN OUT-LAWED BECAUSE THEY CAN CAUSE SALMONELLOSIS, WHICH IS A SEVERE INTERNAL DISEASE. WITH FEW EXCEPTIONS, WILD ANIMALS GROW UP TO BE MISFITS IN A HUMAN WORLD.

CONSIDER A WOLF OR DOLPHIN ALONE IN CAPTIVITY, PERHAPS ATTACHED TO ITS HANDLER BUT NONETHELESS RESTRICTED TO A SMALL CAGE OR TANK ALL ITS LIFE, CUT OFF FROM ITS OWN KIND. ITS SOCIAL NEED FOR COMPANIONSHIP IS CONSTANTLY FRUSTRATED; ITS DEPENDENCY UPON HUMANS CANNOT BE FULLY CONSUMMATED. ADULT MONKEYS AND DOLPHINS DEPRIVED OF THEIR COMPANIONS HAVE MUTILATED THEMSELVES OR DIED FROM DEPRESSION. ANYONE WITH A DEEP RESPECT FOR WILDLIFE WILL THINK TWICE BEFORE TAKING A WILD CREATURE AND PUTTING IT IN AN UNNATURAL CAGE WORLD.

OWNING A WILD ANIMAL CAN ALSO HELP ACCELERATE ITS EXTINCTION. SPECIES LIKE MARGAYS, OCELOTS AND OTHER SMALL SPOTTED CATS FROM SOUTH AMERICA ARE ENDANGERED IN PART BECAUSE OF THE DEMAND FOR THEM AS PETS. THOUSANDS OF BIRDS, FISH, REPTILES, MONKEYS, SMALL WILD CATS AND OTHER MAMMALS DIE DURING CAPTURE, OR FROM THE STRESS AND DISEASE INCURRED DURING SHIPMENT TO THE PET STORE.

UNFORTUNATELY, EVEN WELL-INTENTIONED PEOPLE CAN DO DAMAGE TO THE WILD CREATURES THEY TRY TO HELP. THERE ARE, FOR INSTANCE, MANY KIND SOULS WHO HAVE BACKYARD FEEDERS FOR BIRDS OR RACCOONS. THEY KNOW ENOUGH NOT TO APPROACH ANY WILD CREATURE IN THEIR YARD—THEY KNOW THAT IT COULD BITE AND MAY HAVE RABIES (A RABID ANIMAL SHOWS NO FEAR AND MAY SEEM, THEREFORE,

O BE FRIENDLY). BUT ONE WOMAN I KNOW PUTS OUT 40 POUNDS OF BIRDSEED A WEEK! SUCH OVERFEEDING CAN AFFECT THE BALANCE OF NATURE, SINCE, AS A RESULT, THE AMPLY NOURISHED BIRDS MAY PRODUCE TOO MANY OFFSPRING FOR THE AREA TO SUPPORT. EVEN WORSE, AN OVERFLOWING BIRD FEEDER THAT ATTRACTS TOO MANY BIRDS MAY BE A "TRADING POST" OF DISEASES, SETTING OFF EPIDEMICS AMONG BIRDS THAT NORMALLY KEEP A SAFE DISTANCE FROM EACH OTHER. SO I MUST CAUTION PEOPLE WITH BACKYARD FEEDERS TO PUT OUT ONLY A HANDFUL OF FEED EACH DAY.

OUR DESIRE TO HELP CAN BACKFIRE IN OTHER WAYS. WE FIND A LITTLE FOX CUB, A FAWN, A BABY RABBIT OR A FLEDGLING BIRD APPARENTLY ABANDONED BY ITS PARENTS, SO WE LOVINGLY BRING IT HOME. YET THE LITTLE CREATURE WOULD BE BETTER LEFT ALONE IF A PARENT IS HIDING NEARBY. EVEN AN INFANT BIRD MAY BE FED ON THE GROUND BY ITS PARENTS AND THRIVE, PROVIDED NO CATS ARE AROUND. IF YOU'RE CONCERNED ABOUT SUCH AN ABANDONED ANIMAL AND FEEL IT NEEDS HELP, CALL THE LOCAL HUMANE SOCIETY, ZOO OR STATE WILDLIFE DEPARTMENT FOR ADVICE. GO BACK SEVERAL HOURS LATER TO SEE IF THE ANIMAL IS OKAY AND TO MAKE SURE THE PARENT ISN'T AROUND. IF NECESSARY, YOU MAY THEN WANT TO TAKE IT HOME OR TO A WILDLIFE SANCTUARY.

IN THE COURSE OF MY RESEARCH OVER THE YEARS, I MYSELF HAVE KEPT WILD ANIMALS, AND MY EXPERIENCES HAVE TAUGHT ME THAT THE PLACE FOR THEM IS IN THE WILD. RATHER THAN EXPENDING EFFORT TO KEEP SUCH ANIMALS AS PETS, WE SHOULD BE WORKING TO CONSERVE THEM IN THE NATURAL ENVIRONMENT FOR WHICH THEY ARE BEST ADAPTED AND FITTED.

ED. NOTE: BECAUSE KEEPERS ARE OFTEN ASKED QUESTIONS CONCERNING EXOTIC PETS WE FELT THIS ARTICLE WOULD BE HELPFUL IN REMINDING KEEPERS OF SOME OF THE PROBLEMS INVOLVED WITH EXOTIC PETS.
(REPRINTED FROM McCALL'S DECEMBER 1975, PP. 60 & 127.)

FROM THE AKF STAFF

HAVE YOU NO QUESTIONS

? ?

.....IF NOT, THE FORMAT FOR DR. PATTON'S NUTRITION COLUMN WILL HAVE

TO BE MODIFIED. THIS COLUMN WAS INTENDED AS AN OPEN FORUM FOR ANIMAL KEEPERS CONCERNED WITH THE NUTRITION OF WILD ANIMALS. TO DATE, QUESTIONS RECEIVED FOR THE NUTRITION COLUMN HAVE BEEN EXCELLENT BUT TOO FEW AND FAR BETWEEN. WE FEEL THIS COLUMN IS REGARDED BY MANY AS A VALUABLE FEATURE -- IT WOULD BE UNFORTUNATE TO LOSE IT..... PLEASE SEND QUESTIONS FOR THE NUTRITION COLUMN TO THE AKF EDITORS.

CAT TO HAVE CATARACT SURGERY

A RARE CAT UNDERWENT CATARACT SURGERY AT THE SAN DIEGO ZOO ON SATURDAY, JANUARY 17TH.

A NINE-MONTH-OLD CHEETAH, SUFFERING FROM CATARACTS IN BOTH EYES, WAS TREATED BY A TEAM OF VETERINARIANS AT THE SAN DIEGO ZOO HOSPITAL.

DR. KIRK GELATT, A VETERINARY OPHTHALMOLOGIST AT THE UNIVERSITY OF MINNESOTA COLLEGE OF VETERINARY MEDICINE IN ST. PAUL, PERFORMED THE SURGERY, ASSISTED BY SEVERAL ZOO VETERINARIANS.

THE CHEETAH IS AN UN-NAMED MALE WHICH WAS BORN AT THE SAN DIEGO WILD ANIMAL PARK LAST APRIL. THE CUB WAS REARED BY ITS MOTHER, AND ITS CATARACTS WERE NOT DETECTED UNTIL A KEEPER NOTICED ITS VISION WAS POORER THAN ITS LITTERMATES.

DR. JAMES OOSTERHUIS, VETERINARIAN AT THE ZOO AND WILD ANIMAL PARK, SAID THAT THERE HAVE BEEN NO REPORTS OF CATARACTS IN CHEETAHS LIVING IN ZOOS.

OOSTERHUIS SAID THAT VETERINARY OPHTHALMOLOGY IS A SPECIALTY WHICH HAS BEEN REFINED IN THE PAST DECADE. GELATT HAS DONE SIMILAR SURGERY IN SEVERAL OTHER ZOOS, BUT NO CATARACT SURGERY HAS BEEN DONE AT THE SAN DIEGO ZOO BEFORE.

THIS COULD BE YOUR LAST
AKF

IF YOU HAVE NOT RENEWED
YOUR AAZK MEMBERSHIP,
PLEASE DO SO NOW! ANY-
ONE WHO HAS NOT RENEWED
AS OF MARCH 1ST WILL BE
REMOVED FROM THE MAILING
LIST!

THE EAST AFRICAN WILD LIFE SOCIETY IN THE UNITED STATES BY DONALD A. ROLLA

FOR THOSE INTERESTED IN SOCIETY MEMBERSHIP OR INFORMATION ON SPECIFIC CONSERVATION PROGRAMS THERE ARE SEVERAL LOCAL CHAPTERS IN THE UNITED STATES WHICH WOULD BE GLAD TO BE OF ASSISTANCE.

ALONG WITH TWO DEDICATED LADIES; MS DENYSE KIERONSKI AND MS. MARGOT SHEESLEY, I AM PERSONALLY INVOLVED IN THE ORGANIZATION OF THE GREAT LAKES CHAPTER WHICH COVERS THE STATES OF WISCONSIN, INDIANA AND ILLINOIS. WE ARE CURRENTLY ARRANGING OUR FIRST CHAPTER EVENT FOR MAY 16TH. OUR ADDRESS IS: EAST AFRICAN WILD LIFE SOCIETY; GREAT LAKES CHAPTER, P.O. Box 272, BROOKFIELD, IL 60513.

THOSE IN OTHER PARTS OF THE COUNTRY CAN WRITE TO KEITH TUCKER, THE CHIEF REPRESENTATIVE FOR THE SOCIETY AND HE CAN BE OF ASSISTANCE AND POSSIBLY DIRECT YOU TO A LOCAL CHAPTER. KEITH CAN BE CONTACTED AT THE FOLLOWING ADDRESS: MR. KEITH TUCKER, EAST AFRICAN WILD LIFE SOCIETY, CHIEF REPRESENTATIVE NORTH AMERICA, P.O. Box 82002, SAN DIEGO, CA 92138.

MY ASSOCIATION WITH THE AAZK THE LAST FEW YEARS HAS SHOWN ME JUST HOW DEDICATED THE ZOO KEEPERS OF AMERICA ARE. IT IS THIS TYPE OF CONCERN AND DEDICATION THAT EAST AFRICAN WILD LIFE SOCIETY NEEDS IN AMERICA SO THAT THRU OUR LOCAL CHAPTERS WE CAN HELP EDUCATE THE GENERAL PUBLIC ON THE NECESSITY OF SUPPORTING THE CONSERVATION OF EAST AFRICAN WILD LIFE. WE HAVE A LONG WAY TO GO IN OVERCOMING IGNORANCE AND APATHY IN BOTH EAST AFRICA AND THE UNITED STATES. THE SOONER WE JOIN FORCES IN THIS COMMON GOAL, THE SOONER THE ANIMALS OF EAST AFRICA WILL BENEFIT IN THE WILD AND IN THEIR CAPTIVE STATE.

BOTH KEITH AND I LOOK FORWARD TO HEARING FROM YOU.

CONFERENCE ON DISTRESSED WILDLIFE

IS TO BE HELD ON WEDNESDAY, 3 MARCH 1976 AT THE TACKAPAUSHA MUSEUM AND PRESERVE, SEAFORD, NEW YORK. THE CONFERENCE, SPONSORED BY THE NASSAU COUNTY DEPARTMENT OF RECREATION AND PARKS RUNS FROM 8:30 A.M. TO 5:30 P.M.. THE SPONSORS HAVE EXTENDED AN INVITATION TO ZOO PERSONNEL. WRITE FOR INFORMATION TO COORDINATOR, CONFERENCE ON DISTRESSED WILDLIFE, TACKAPAUSHA MUSEUM AND PRESERVE, SEAFORD, NEW YORK 11783.

RED-THIGHED FALCONET INFORMATION BY JAMES J. PERRY, BUFFALO, N.Y.

APPROXIMATELY ONE YEAR AGO, THE BUFFALO ZOO'S TWO RED-THIGHED FALCONETS, MICROHIERAX CAERULESCENS, WHICH WERE AT LEAST 6 YEARS OLD, WERE MOVED INTO A RENOVATED EXHIBIT. SOON AFTER, 3 EGGS WERE LAID OVER A PERIOD OF 3 WEEKS. THE EGGS WERE NOT PROPERLY BROODED AND ONE WAS ARTIFICIALLY INCUBATED WITH NO SIGNS OF FERTILITY. UNFORTUNATELY, ONE OF THE FALCONETS DIED SHORTLY AFTER THE EGGS WERE LAID.

IN MY EFFORTS TO FIND OUT MORE ABOUT THESE SMALL BUT VERY INTERESTING BIRDS OF PREY, I RECEIVED A COMMUNICATION FROM CHRISTIAN R. SCHMIDT, ZOOLOGICAL ASST., AT THE ZURICH ZOO. I'D LIKE TO SHARE THIS INFORMATION WITH ANY WHO ARE INTERESTED. OTHER EUROPEAN ZOOS WITH SPECIMENS ARE THE FRANKFURT AND HEIDELBERG ZOOS IN GERMANY. THE ZURICH ZOO HAS 3.5 SPECIMENS AND A STUDENT IS CURRENTLY STARTING A RESEARCH PROJECT ON THE FALCONETS. AS MR. SCHMIDT SAYS, "SEXING THE FALCONETS IS QUITE EASY, SINCE THEY SHOW REMARKABLE SIZE DIFFERENCES; MALES ARE MUCH SMALLER, WEIGHING ONLY 32-37 GRAMS, FEMALES WEIGHING 46-55 GRAMS (RECORDED FROM 4 MALES AND 5 FEMALES)." THE BUFFALO ZOO'S SPECIMEN WEIGHED 50 GRAMS FALLING NICELY WITHIN THE WEIGHT RANGE OF THE FEMALES.

I WOULD LIKE TO KNOW WHAT OTHER NORTH AMERICAN ZOOS HAVE SPECIMENS OF RED-THIGHED FALCONETS; WHAT THEIR LONGEVITY IN CAPTIVITY IS; AND EXCHANGE INFORMATION ON DIETS AND NESTING FACILITIES WITH ANYONE ELSE WHO HAS HAD EXPERIENCE WITH THIS SPECIES. MY GOAL IS TO FIND A MATE FOR OUR SPECIMEN, EITHER FOR HERE OR AT ANOTHER ZOO. WRITE TO: JAMES J. PERRY, BUFFALO ZOOLOGICAL GARDENS, BUFFALO, N.Y. 14214.

BLACKBUCK EXODUS BY MARY JO BOWERS

SAN ANTONIO ZOO, IN CO-OPERATION WITH THE WORLD WILDLIFE FUND, PARTICIPATED ALONG WITH SEVERAL TEXAS EXOTIC GAME RANCHERS IN SHIPPING THREE MALE AND SEVEN FEMALE BLACKBUCK TO PAKISTAN TO BE USED AS A BREEDING NUCLEUS FOR ANIMALS TO BE RELEASED IN LAL SUHNRA SANCTUARY. THE WORLD WILDLIFE FUND AND THE PAKISTANI GOVERNMENT WERE DETERMINED TO RE-INTRODUCE THE BLACKBUCK IN ITS NATIVE RANGE WHERE IT HAD BECOME ALMOST EXTINCT; AND SINCE THERE ARE NOW MORE BLACKBUCK IN TEXAS THAN IN PAKISTAN, THIS WAS THE PLACE TO START.

IN THE LAST FEW YEARS OUR BLACKBUCK HAVE BEEN PRODUCING YOUNG TO SUCH AN EXTENT THAT WE DECIDED TO REDUCE OUR GROUP SO THAT THE ANIMALS WILL HAVE A BIT MORE SPACE IN THEIR EXHIBIT.

FROM "SAN ANTONIO'S NEWS FROM THE ZOO" VOL. 1 NOV. 6,
NOV. - DEC. 1975

LINCOLN PARK ZOO ANNOUNCES PROMOTIONS

DENNIS A. MERITT JR., 2710 N. EWING AV., EVANSTON, HAS BEEN NAMED ASSISTANT DIRECTOR AT LINCOLN PARK ZOO. MERITT SUCCEEDS SAUL KITCHENER, WHO LEFT LINCOLN PARK LAST MONTH TO BECOME THE DIRECTOR OF THE SAN FRANCISCO ZOO.

MARK A. ROSENTHAL, 347 W. MENOMONEE ST., HAS BEEN PROMOTED TO CURATOR OF MAMMALS, MERITT'S PREVIOUS POSITION. ROSENTHAL HAD BEEN AN ASSOCIATE CURATOR.

MERITT JOINED LINCOLN PARK ZOO IN 1967 AS A ZOOLOGIST. HE BECAME A CURATOR A YEAR LATER. MERITT GRADUATED FROM THE UNIVERSITY OF ROCHESTER IN 1967. HE HAS ALSO ATTENDED DEPAUL UNIVERSITY AND NORTHEASTERN ILLINOIS UNIVERSITY.

BEFORE JOINING LINCOLN PARK ZOO, MERITT WORKED AS A RESEARCH ASSISTANT AT THE UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE AND AT ROCHESTER GENERAL HOSPITAL. HE HAS AUTHORED MORE THAN 20 ZOOLOGICAL PUBLICATIONS.

ROSENTHAL IS A 1968 GRADUATE OF SOUTHERN ILLINOIS UNIVERSITY IN CARBONDALE. HE ALSO HAS A MASTER'S DEGREE FROM NORTHEASTERN ILLINOIS UNIVERSITY.

ROSENTHAL HAS WORKED AT LINCOLN PARK ZOO AS A CHILDREN'S ZOO ATTENDANT AND AN ANIMAL KEEPER BEFORE BECOMING AN ASSOCIATE CURATOR.

HE WAS A LABORATORY TECHNICIAN AT SOUTHERN ILLINOIS UNIVERSITY'S ZOOLOGY DEPARTMENT BEFORE JOINING THE ZOO.

CONSERVATION

SECOND DISTRICT CONGRESSMAN WILLIAM WHITEHURST (R-VA) HAS CHARGED THE INTERIOR DEPARTMENT WITH A BLATANT BREACH OF FAITH IN PARTICIPATING IN THE SLAUGHTER OF WOLVES IN ALASKA. HE HAS ASKED THE HOUSE SUBCOMMITTEE ON PUBLIC LANDS TO DELAY ACTION ON HIS LEGISLATION GIVING GREATER POWER TO THE INTERIOR DEPARTMENT REGARDING THE CARE OF ANIMALS. THE ACTION FOLLOWS AN INTERIOR DEPARTMENT ADMISSION THAT IT HAD HELPED FINANCE AN ALASKAN PROJECT IN WHICH ALL WOLVES ARE TO BE KILLED IN WILD AREAS THAT COVER THOUSANDS OF SQUARE MILES. THE PROJECT IS REPORTEDLY BEING UNDERTAKEN TO INCREASE THE NUMBER OF MOOSE FOR HUNTERS TO KILL. THE INTERIOR DEPARTMENT HAD PREVIOUSLY ISSUED REPEATED DENIALS THAT FEDERAL MONEY WAS BEING USED IN THE PROGRAM.

ANIMAL KEEPERS' FORUM FINANCIAL STATEMENT - 4TH QUARTER 1975
 BY JUDIE STEENBERG

CASH ON HAND 30 SEPTEMBER 1975 \$300.31

INCOME

AAZK MEMBERSHIPS (19 @ \$2.50)	\$ 47.50	
DONATIONS: TO AKF	2.00	
TO JOURNAL, "THE KEEPER"	250.00	
FUND-RAISER FOR "THE KEEPER"	112.91	
	\$ 412.41	<u>\$412.41</u>
TOTAL INCOME		<u></u>

EXPENSES

PRINTING SUPPLIES	\$ 35.50	
POSTAGE: MISCELLANEOUS (CORRES. RET'D AKF'S)	21.00	
1ST CLASS CANADA, FOREIGN, PKGS.	34.97	
BULK DEPOSIT OCT.-DEC.	104.90	
OFFICE SUPPLIES	7.79	
TELEPHONE EXPENSES	4.42	
LOGO-PREP/AKF POSTER	17.18	
FUND-RAISER COSTS	37.80	
JOURNAL: "THE KEEPER" COSTS:		
TYPEWRITER RENTAL	15.53	
TYPIST, FINAL COPY	35.00	
PHOTO-PREP FOR COVER	2.59	
PETTY CASH	19.47	
SERVICE CHARGES, CHECK CHARGES	3.26	
TOTAL EXPENSES	\$ 339.41	<u>-\$339.41</u>

CASH ON HAND 30 DECEMBER 1975	<u>\$373.31</u>
ALLOCATED TO "THE KEEPER" PRINTING COSTS	<u>271.99</u>
OPERATING CAPITAL 30 DECEMBER 1975	\$101.32

DEADLINE FOR THE MARCH ISSUE OF AKF IS 20 FEB. '76

ANIMAL KEEPERS' FORUM FINANCIAL STATEMENT 1975

(QUARTERLY ITEMIZED STATEMENTS APPEARED IN THE MAY, AUG., AND NOV. ISSUES OF AKF.)

CASH ON HAND 30 DECEMBER 1974	\$ 305.29
INCOME FOR 1975 (MEMBERSHIPS/SUBSCRIPTIONS,	2,177.41
DONATIONS, FUND-RAISER, LOAN	\$ 2,482.70
FOR STENCIL CUTTER)	

EXPENSES

REFUNDS (AKF/AAZK DUPLICATIONS)	\$ 80.00
PRINTING SUPPLIES & MACHINE USE	437.55
POSTAGE	593.11
OFFICE SUPPLIES	45.25
TELEPHONE EXPENSE	4.42
LOGO-PREP. AKF POSTER	17.18
JOURNAL FUND-RAISER EXPENSE	37.80
JOURNAL PREPARATION EXPENSE	53.12
PETTY CASH	19.47
BANK CHARGES	3.76
EQUIPMENT PURCHASES	<u>817.63</u>
	\$2,109.39
	<u>\$ 2,109.39</u>

CASH ON HAND 30 DECEMBER 1975	\$ 373.31
ALLOCATED TO PRINTING "THE KEEPER"	<u>- 271.99</u>

	\$ 101.32
OUTSTANDING DEBT: LOAN FROM TOPEKA FRIENDS	
OF THE ZOO FOR THE STENCIL	
CUTTER	<u>\$ -400.00</u>
	\$ -298.68

MEMO FROM THE KEEPER OF THE BOOKS:

AS THE AKF BOOKS ARE CLOSED FOR 1975, LET'S REFLECT ON OUR FIRST FULL YEAR OF OPERATION. EVERY EFFORT WAS MADE BY THE AKF STAFF TO CAREFULLY EXPEND THE FUNDS ENTRUSTED TO THEM TO PRODUCE A MONTHLY PUBLICATION. EMPHASIS WAS ON PROVIDING THE BEST NEWSLETTER POSSIBLE WHILE STAYING WITHIN AKF'S FINANCIAL LIMIT. THE LOAN FROM TOPEKA FRIENDS OF THE ZOO IS NOT DUE UNTIL MARCH AND THERE ARE NO OTHER OUTSTANDING DEBTS. THE OBJECTIVE WAS ACCOMPLISHED. (CONT'D)

ALTHOUGH AKF HAS THE LOAN FROM TOPEKA FRIENDS OF THE ZOO TO REPAY, THE POSTAL RATES AND THE COST OF SUPPLIES HAVE INCREASED, THE AKF STAFF FELT IT WAS NOT NECESSARY TO INCREASE THE COST TO YOU THIS YEAR.

YOUR SUPPORT IS OF UTMOST IMPORTANCE TO THE CONTINUED SUCCESS OF AAZK/ AKF. THE AAZK/AKF STAFF INTENDS TO GIVE TOTAL EFFORT TOWARDS A SUCCESSFUL 1976. RENEW NOW..... AND DO YOUR PART TO RECRUIT NEW MEMBERS. WE CANNOT DO IT WITHOUT YOUR HELP. THANKS FOR YOUR SUPPORT IN 1975, YOU HELPED MAKE IT HAPPEN!

***** AAZK '76 Conference *****

WILL BE HELD IN SAN DIEGO, CALIFORNIA FROM AUGUST 23 - 27. CONFERENCE HEADQUARTERS WILL BE THE SHERATON AIRPORT INN ON SHEL HARBOR ISLAND IN DOWNTOWN SAN DIEGO. THE REGISTRATION OF \$30.00 PER PERSON WILL INCLUDE BANQUET, COCKTAIL RECEPTION, LUNCHEONS, ETC..

THE ROOM RATES ARE AS FOLLOWS: SINGLES - \$21.00, TWIN OR DOUBLE - \$26.00, SUITES - \$75.00 (THE RATES DO NOT INCLUDE ROOM TAX).

MIKE DEE AND STEVE TAYLOR WILL BE HANDLING THE CONFERENCE PROGRAM. MATERIAL FOR THE PROGRAM SHOULD BE SENT TO MIKE AT 1141 WESTERN AVE., GLENDALE, CA 91201.

THOSE WISHING TO PRESENT PAPERS, SLIDES OR FILMS SHOULD SEND INFORMATION ON THE TITLE, SUBJECT OF MATERIAL AND EQUIPMENT REQUIRED AS SOON AS POSSIBLE TO MIKE.

THOSE WHO DESIRE TO INCORPORATE A FAMILY VACATION INTO THE CONFERENCE TRIP SHOULD BE REMINDED THAT THE HOTEL DOES NOT ALLOW CAMPING OR OVERNIGHT PARKING IN THEIR PARKING LOT. THE ADDRESSES OF TWO CAMPING GROUNDS LOCATED NEAR THE HOTEL ARE: MISSION BAY CAMPLAND, 2211 PACIFIC BEACH DR., SAN DIEGO, CA 92109 AND K.O.A., SAN DIEGO METROPOLITAN, 3601 EDMERE, SAN DIEGO, CA 92010.

THE KEEPER IS OUT!!!

IF YOU HAVE NOT YET RECEIVED YOUR COPY OF THE KEEPER VOLUME 1, 1975, IT IS IN THE MAIL. THE JOURNAL HAS BEEN MAILED TO ALL 1975 AAZK MEMBERS AND AKF SUBSCRIBERS. NEW MEMBERS FOR 1976 MAY ORDER A COPY OF THE 1975 JOURNAL BY SENDING \$5.00 TO: AAZK JOURNAL, 635 GAGE BLVD., TOPEKA, KS. 66606. (MAKE CHECKS PAYABLE TO: ANIMAL KEEPERS' FORUM).

ANIMAL KEEPERS' FORUM
635 GAGE BOULEVARD
TOPEKA, KANSAS 66606

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SEE PAGE 22
IMPORTANT FOR INFORMATION

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AMERICAN ASSOCIATION OF ZOO KEEPERS

ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

VOLUME III NUMBER 3

MARCH 1976

ANIMAL KEEPERS' FORUM

DEDICATED TO PROFESSIONAL ANIMAL CARE

"ANIMAL KEEPERS' FORUM" IS A NON-PROFIT MONTHLY PUBLICATION DISTRIBUTED TO PROFESSIONAL ZOO KEEPERS INDEPENDENTLY AND BY THE AMERICAN ASSOCIATION OF ZOO KEEPERS AS A SERVICE TO ITS MEMBERS. "ANIMAL KEEPERS' FORUM" INCLUDES NEWS AND OFFICAL ANNOUNCEMENTS OF THE AMERICAN ASSOCIATION OF ZOO KEEPERS.

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SEND NEWS ITEMS AND ARTICLES FOR PUBLICATION TO:
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QUESTIONS FOR DR. PATTON'S NUTRITION COLUMN SHOULD
BE SENT TO THE AKF EDITORS.

FOR INFORMATION CONCERNING MEMBERSHIP IN THE AMERICAN ASSOCIATION OF ZOO KEEPERS WRITE TO: AAZK NATIONAL HEADQUARTERS/ 635 GAGE BLVD. TOPEKA, KS. 66606

BREAKTHROUGH IN THE BIRD HOUSE from Philadelphia Zoo

HEAD KEEPER OF BIRDS, RALPH HORN, HAS DEVISED A NEW AND EXCITING PROCEDURE FOR REPLACING LOST OR DAMAGED BIRD BILLS. ALTHOUGH IT IS TOO EARLY TO DETERMINE THE EXTENT OF THE PROJECT'S SUCCESS, THE SIGNS ARE ENCOURAGING. THE PROJECT BEGAN EARLY IN DECEMBER WHEN RALPH RECEIVED A CALL FROM DR. MITCHELL BUSH ON THE VETERINARY STAFF OF THE NATIONAL ZOO. DR. BUSH HAD HEARD OF RALPH'S SUCCESS IN CONSTRUCTING AN ARTIFICIAL MALLARD DUCK MANDIBLE AND ASKED HIM TO TRY HIS LUCK WITH A DISFIGURED WHITE-CRESTED GUAN. THE GUAN HAD LOST HALF OF ITS LOWER BILL THROUGH AN INJURY. RALPH AGREED, RECEIVED THE BIRD SHORTLY THEREAFTER, AND PROCEEDED TO CONSTRUCT A HAND-CARVED PLASTIC LOWER MANDIBLE. THE BILL WAS FITTED ON JANUARY 5 AND 5 DAYS LATER THE BIRD BEGAN TO PREEN AND EAT BY ITSELF, WHICH IT COULD NOT DO PREVIOUSLY. IF THE MAN-MADE BILLS PROVE TO BE ENDURING, THEY WILL PERMIT THE SURVIVAL OF BIRDS WHICH MIGHT OTHERWISE PERISH.

SIMULATED FEEDING DEVICE Brookfield Zoo

BROOKFIELD ZOO INITIATES ANOTHER BEHAVIORAL EXHIBIT WITH THE INSTALLATION OF A SIMULATED RED DEER IN THE SIBERIAN TIGER GROTTO. THE PROJECT, TO BE COMPLETED IN LATE MARCH, IS PLANNED TO GIVE THE ZOO-GOER A GLIMPSE OF NATURAL FEEDING BEHAVIOR OF THE SIBERIAN TIGER. THE SEVEN FOOT LONG DEER FORM IS MADE OF HIGH DENSITY CONCRETE AND WEIGHS 1000 POUNDS. THE DEER WILL BE WIRED SO THAT A STRONG TUG ON ITS LEG OR RIB WILL OCCASIONALLY TRIGGER A FEEDING DEVICE. A SMALL PORTION OF MEAT WILL THEN BE AVAILABLE FOR THE TIGERS. BROOKFIELD ZOO HOPES THIS EXHIBIT WILL PROVIDE THE VISITOR WITH NOT ONLY MORE OPPORTUNITIES TO SEE THE FEEDING BEHAVIOR, BUT-MORE IMPORTANTLY-A FEEDING BEHAVIOR MORE AUTHENTIC THAN THAT EXHIBITED BY CATS HANDED THEIR FOOD ONCE A DAY BY A KEEPER.

MIKE DEE FROM LOS ANGELES (HE'S ALWAYS LOOKING FOR FREEBIES) WRITES TO TELL US OF A FREE BOOK ENTITLED THE ECOLOGY OF THE COYOTE IN YELLOWSTONE. WRITTEN BY ADOLPH MURIE, YOU CAN GET IT FROM CHIEF SCIENTIST, NATIONAL PARK SERVICE SCIENCE CENTER, NATIONAL SPACE TECHNOLOGY LABORATORIES, BAY ST. LOUIS, MISSISSIPPI 39520.

AN EDITORIAL COMMENT by Chris LaRue, Topeka Zoological
Park, Topeka, Ks.

ONE OF THE MAJOR GOALS OF AAZK AND THIS NEWSLETTER IS TO PROMOTE PROFESSIONALISM IN ANIMAL KEEPERS. UNFORTUNATELY, KEEPERS DO NOT BELONG TO A RECOGNIZED PROFESSION AND, IN FACT, MANY KEEPERS ARE NOT PROFESSIONAL. ZOO KEEPING IS A RESPONSIBLE AND REWARDING OCCUPATION IF IT IS TREATED AS A CAREER AND NOT JUST A JOB. A PROFESSIONAL ATTITUDE CAN GIVE KEEPERS THE KIND OF FULFILLMENT THAT MERELY CLEANING CAGES WILL NEVER GIVE THEM.

WHAT THEN IS A PROFESSIONAL ATTITUDE? INSURING THAT YOUR ANIMALS RECEIVE THE BEST CARE POSSIBLE SHOULD BE THE MOST OBVIOUS ANSWER. THIS MAY BE DIFFICULT TO ACHIEVE WITH LIMITED RESOURCES AND KNOWLEDGE BUT IT IS THE EFFORT THAT SEPERATES THE PROFESSIONAL FROM THE NON-PROFESSIONAL. NO ONE CAN MAKE YOU A PROFESSIONAL. THE QUALITY OF YOUR WORK, YOUR CONCERN FOR YOUR ANIMALS AND YOUR ZOO, AND YOUR ATTITUDE TOWARD YOUR JOB WILL DETERMINE YOUR PROFESSIONALISM OR LACK THEREOF.

TO BECOME A PROFESSIONAL, KEEPERS MUST BEGIN BY TAKING A SINCERE INTEREST IN THE EXPERT CARE OF THEIR ANIMALS. THIS REQUIRES EDUCATION, BOTH FORMAL AND INFORMAL. LEARNING MORE ABOUT HIS OR HER ANIMALS IS ONE OF THE MOST IMPORTANT OBLIGATIONS OF A KEEPER. IF YOU CANNOT FIND THE MOTIVATION TO INCREASE YOUR KNOWLEDGE OF THE ANIMALS YOU CARE FOR, YOU WILL NEVER BECOME A PROFESSIONAL.

ZOOS MUST ALSO PLAY AN IMPORTANT ROLE IN ENCOURAGING PROFESSIONALISM IN THEIR KEEPER STAFF. ZOO PERSONNEL REQUIRE TECHNICAL TRAINING AS DO OTHER PROFESSIONALS. IF ZOOS ARE SERIOUS ABOUT OPERATING AS RESPECTED EDUCATIONAL INSTITUTIONS THEY MUST STRIVE TO MAINTAIN AN EDUCATED STAFF FROM DIRECTOR TO KEEPERS.

IT IS THE RESPONSIBILITY OF THE ZOO ADMINISTRATION TO INSURE THAT THEIR STAFF IS THE BEST POSSIBLE. THIS CAN BEST BE ACHIEVED BY SETTING STANDARDS THAT ARE RIGOROUSLY ENFORCED, NOT ONLY MINIMUM REQUIREMENTS FOR HIRING BUT, MORE IMPORTANTLY, STRICT STANDARDS OF PERFORMANCE. ZOO KEEPING AS A PROFESSION CAN THEN BE IMPROVED BY NATURAL SELECTION THROUGH COMPETITION. THE ZOO AND THE ANIMALS WILL BENEFIT FROM THESE EFFORTS.



American Association of Zoo Keepers
635 Gage Boulevard
Topeka, Kansas 66606

FOURTH QUARTER TREASURER'S REPORT, AAZK

SUCH AS IT IS, HERE IS A BREAKDOWN OF OUR INCOME AND EXPENDITURES FOR THE FOURTH QUARTER OF 1975, AS OF 31 DECEMBER, 1975:

ITEM	CREDIT	DEBIT
DUES AND DONATIONS RECEIVED	\$1349.55	
REFUNDS, PRORATED MEMBERSHIPS		88.75
POSTAGE		56.59
MISC. OFFICE SUPPLIES		5.93
ANIMAL KEEPERS' FORUM ACCOUNT		577.50
TELEPHONE REPORT FROM ELECTION REFEREE		7.77
	<u>1349.55</u>	<u>736.54</u>
	-736.54	
	<u>613.01</u>	

31 DECEMBER, 1975
CASH ASSETS

THE FUTURE LOOKS GREAT. RENEWALS AND NEW MEMBERSHIPS ARE ROLLING IN AND OUR TREASURY LOOKS NOTHING BUT ROSEY FOR 1976. THANKS TO ALL OF YOU FOR YOUR PATIENCE THIS PAST YEAR AND FOR YOUR FAITH IN THE FUTURE

Rick Steenberg
RICK STEENBERG
EXECUTIVE SECRETARY
AAZK HEADQUARTERS

OF VETERINARIANS AND KEEPERS by Dr. Stuart Porter, Gladys Porter Zoo, Brownsville, Tx.

THE PURPOSE OF THIS ARTICLE IS TO GIVE THE PEOPLE WHO WORK WITH ANIMALS AN APPRECIATION OF DISEASE, ITS CAUSES, AND HOW WE ATTEMPT TO CURE AND CONTROL IT. VERY LITTLE IS SIMPLE IN MEDICINE AND OFTEN, RATHER THAN ANSWER WHAT SEEMS TO THE ASKER A SIMPLE QUESTION, THE MEDICAL MAN GIVES AN ABRUPT YES, NO, OR NO ANSWER AT ALL. HOPEFULLY, THIS PAPER, ALTHOUGH VERY GENERAL, WILL ANSWER A FEW QUESTIONS ABOUT BACTERIAL DISEASES.

BACTERIA ARE MICROSCOPIC ONE-CELLED ORGANISMS WHICH EXIST EVERYWHERE. THERE ARE MANY DIFFERENT TYPES OF BACTERIA; SOME ARE HARMLESS, AND SOME CAUSE DISEASE ONLY UNDER CERTAIN CIRCUMSTANCES. THERE ARE BACTERIA WHICH PRODUCE DISEASE IN PLANTS AND THOSE WHICH PRODUCE DISEASE IN ONE CERTAIN SPECIES, WHILE OTHERS PRODUCE DISEASE IN ALL ANIMALS.

BACTERIA CAUSE DISEASE IN SEVERAL WAYS. THEY CAN INVADE CELLS AND CAUSE THEIR DESTRUCTION BY DIVIDING UNTIL THE CELL BURSTS, RELEASING BACTERIA TO INVADE OTHER CELLS. SOME BACTERIA PRODUCE CHEMICAL PRODUCTS WHICH MAY CAUSE PARALYSIS OR OTHER EFFECTS. SOME BACTERIA MERELY FORM FIRM SWELLINGS CONTAINING PUS - CALLED ABSCESSES.

BACTERIA ARE SPREAD IN MANY WAYS. ONCE IN AN ANIMAL THEY CAN BE SPREAD THROUGH THE BLOOD TO THE VARIOUS ORGANS OR THEY CAN MIGRATE THROUGH THE TISSUES. THEY CAN ALSO SPREAD FROM ANIMAL TO ANIMAL IN SEVERAL WAYS, BUT ALMOST ALWAYS THERE HAS TO BE DIRECT CONTACT BETWEEN THE BACTERIA AND THE NEW HOST. AN ANIMAL WITH A BACTERIAL DIARRHEA SPREADS BACTERIA THROUGH ITS FECES. AN ANIMAL WITH A BACTERIAL RESPIRATORY PROBLEM SPREADS BACTERIA THROUGH DISCHARGES FROM ITS NOSE AND THE SPUTUM IT COUGHS UP. AN ANIMAL WITH A BACTERIAL KIDNEY OR BLADDER INFECTION SPREADS BACTERIA THROUGH ITS URINE. SOME BACTERIA ARE CAPABLE OF BEING SHED FROM ALL THE BODY OPENINGS.

SOME BACTERIA ARE VERY STABLE ONCE OUTSIDE THE HOST AND ARE CAPABLE OF SURVIVING FOR LONG PERIODS BY FORMING A RESTING STAGE CALLED A SPORE. BACTERIAL SPORES ARE RESISTANT TO HEAT, DRYING, AND DISINFECTANTS. OF COURSE, MANY BACTERIA ARE KILLED BY HEAT, DRYING, AND DISINFECTANTS.

WHAT CAN WE DO AGAINST A BACTERIAL INFECTION? DIAGNOSIS IS VERY IMPORTANT. THERE ARE VERY FEW DISEASES THAT HAVE CLASSICAL SIGNS THAT SUGGEST A BACTERIAL CAUSE. IT IS POSSIBLE TO MAKE A SPECIFIC DIAGNOSIS OF BACTERIAL INFECTION BY CULTURING THE BACTERIA IN AN ARTIFICIAL MEDIUM. IT IS THEN POSSIBLE TO IDENTIFY THE BACTERIA AND TO TEST WHICH ANTIBIOTICS WILL DESTROY IT. BLOOD TESTS AND CLINICAL SIGNS MAY ALSO AID IN THE DIAGNOSIS. SINCE CULTURING TAKES SEVERAL DAYS, MANY VETERINARIANS MAY BEGIN TREATMENT AT THE ONSET OF SYMPTOMS AND THEN CHANGE THE TREATMENT ACCORDING TO THE CULTURE AND SENSITIVITY RESULTS. ANTIBIOTICS ARE USED TO TREAT ANIMALS WITH BACTERIAL INFECTIONS. THERE ARE MANY DIFFERENT KINDS OF ANTIBIOTICS, SOME ARE VERY SPECIFIC AND OTHERS ARE BROAD SPECTRUM, EFFECTIVE AGAINST MANY KINDS OF BACTERIA. IN ADDITION, BACTERIA HAVE THE ABILITY TO BECOME RESISTANT TO AN ANTIBIOTIC. FEW ANTIBIOTICS CAN BE GIVEN ONLY ONCE A DAY. MOST ARE GIVEN SEVERAL TIMES A DAY AND IT IS VERY IMPORTANT THAT THE INTERVALS BETWEEN ADMINISTRATION ARE EVENLY SPACED BECAUSE THE PURPOSE IS TO KEEP THE BLOOD AND TISSUE LEVELS OF THE ANTIBIOTIC HIGH ENOUGH TO KILL THE BACTERIA. IT IS ALSO IMPORTANT TO KEEP THE TREATMENT UP LONG ENOUGH. THIS IS WHY A VETERINARIAN MAY CONTINUE TO TREAT AN ANIMAL THAT APPEARS TO HAVE RECOVERED.

ISOLATION OF THE DISEASED ANIMAL MAY BE INDICATED. IF ISOLATION IS TO BE SUCCESSFUL, CAREFUL ATTENTION MUST BE PAID TO DETAIL. DISINFECTION IS THE CHEMICAL DESTRUCTION OF DISEASE CAUSING ORGANISMS. FOR DESTRUCTION THERE MUST BE CONTACT, THUS CLEANING MUST PRECEDE DISINFECTION. THERE ARE NUMEROUS DISINFECTANTS AVAILABLE. THE KEEPER MUST REMEMBER TO WASH HIS HANDS AND BOOTS EVERY TIME HE COMES IN CONTACT WITH THE SICK ANIMAL.

AS I SAID EARLIER, THERE ARE MANY TYPES OF BACTERIA THAT PRODUCE DISEASE IN MANY ANIMALS INCLUDING MAN. CROSS-INFECTION CAN OCCUR BETWEEN MAN AND ANIMALS. SOME EXAMPLES OF SUCH BACTERIAL DISEASES ARE TUBERCULOSIS, ANTHRAX, SALMONELLOSIS, SHIGELLOSIS, ORNITHOSIS, BRUCELLOSIS, AND ERYSIPELIS. IN ADDITION, PRIMATES ARE SUSCEPTIBLE TO MANY OTHER HUMAN BACTERIAL DISEASES - SO, PRIMATE KEEPERS MUST BE VERY CAREFUL. SOME BACTERIAL DISEASES LIKE TETANUS AND BOTULISM ARE CAUSED BY BACTERIAL TOXINS AND ARE NOT CONTAGIOUS ALTHOUGH MANY ANIMALS ARE SUSCEPTIBLE TO THEM.

THE BEST WAY TO COMBAT BACTERIAL DISEASES IS TO PREVENT THEM FROM OCCURRING BY KEEPING THE ANIMALS WELL FED AND THEIR ENVIRONMENTS CLEAN. IT IS THE PEOPLE WHO TAKE CARE OF THE ANIMALS, THEN, WHO ARE THE FIRST DEFENCE IN PREVENTING BACTERIAL DISEASES.

ANIMAL NUTRITION by Dr. Richard S. Patton, Director of Professional Education, Mark Morris & Associates, Topeka, Ks.

THIS IS A STORY ABOUT ONE OF THOSE DAYS. I WAS USING A BROKEN-HANDLED HATCHET TO CHOP A HOLE IN THE ICE OF THE POLAR BEAR'S WATER TANK. AT ZERO DEGREES THE SPLASHING WATER AND ICE FROZE QUICKLY TO THE STEEL HATCHET (AS WELL AS MY FACE AND HANDS). AFTER A FEW HALF-HEARTED CHOPS, MY NUMB ARM RAISED MORE EASILY AND I DISCOVERED IT WAS BECAUSE THE HATCHET HAD SLIPPED FROM MY GRASP AND INTO THE TANK. SHEDDING COAT, HAT, GLOVES AND COMPOSURE, I ROLLED UP MY SLEEVE AND PLUNGED MY HAND THROUGH THE HOLE IN THE ICE AFTER THE MISSING HATCHET. OF COURSE, THE HATCHET WAS ONE-HALF INCH DEEPER THAN I COULD ROLL UP MY SLEEVE, BUT THAT DIDN'T MATTER. I IMMEDIATELY LOST MY FOOTING ON THE ICE AROUND THE TANK AND MERRILY SPLASHED IN UP TO MY ARMPIT. WITH ALL SELF-CONTROL NOW VANISHED, MY MAIN THOUGHT WAS THAT IF I WAS GOING TO GET MY SLEEVE WET, WHY THE HELL DID I BOTHER TO ROLL IT UP? SUCH WAS MY LOGIC AT THIS POINT.

WELL, THE COAT I HAD QUICKLY SHED TO RETRIEVE THE HATCHET WAS FLUNG JUST A LITTLE TOO CLOSE TO THE EXHIBIT BARS AND NANUK LOST NO TIME, NO TIME AT ALL, RELOCATING SAID COAT INSIDE THE EXHIBIT BARS. I WON'T WASTE TIME DESCRIBING THE FATE OF MY COAT (IT WAS ROUGHLY AKIN TO THAT OF A BOX OF KLEENEX RUN OVER BY A LAWN MOWER), BUT I CAN COMMENT THAT POLAR BEARS DO NOT SEEM TO DIGEST DACRON, DESPITE A PRONOUNCED AFFINITY FOR EATING IT. I ALSO FOUND OUT THAT IT TAKES ABOUT A DAY TO A DAY AND A HALF FOR INGESTED DACRON TO TRAVEL FROM ONE END OF A BEAR TO THE OTHER. IT WAS A DAY AND A HALF LATER WHEN SHREDS OF DACRON CLEVERLY HIDING IN BEAR FECES, PLUGGED THE DRAIN AND FLOODED THE UNIT. I HAD ACCIDENTALLY REDISCOVERED THE TECHNIQUE OF "MARKERS" USED IN NUTRITION RESEARCH TO DETERMINE RATE OF PASSAGE.

ANYWAY, THERE I WAS, COLD AND FEELING NO LOVE FOR ANY BEAR ANYWHERE. THE HATCHET WAS STILL WHERE I HAD DROPPED IT. I HAD LITTLE TROUBLE RATIONALIZING THAT IT COULD RUST THERE FOREVER AND SERVE AS AN EXCELLENT SOURCE OF SUPPLEMENTAL IRON FOR THOSE CHARMING BEARS. (I DIDN'T FEEL QUITE SO COLD AS I THOUGHT MAYBE ONE OF THEM MIGHT EVEN CUT ITSELF ON THAT RUSTY HATCHET AND DIE OF LOCKJAW.)

CHANGING THE SUBJECT SOMEWHAT, IRON DIOXIDE, THAT WHICH WOULD FORM ON THE HATCHET, WOULD NOT BE THE BEST SOURCE OF SUPPLEMENTAL IRON. THE FORM TO USE WOULD BE FERROUS SULFATE. IT HAS A HIGH BIOLOGIC AVAILABILITY (I.E., A HIGH PERCENTAGE, PERHAPS 50-70% OF THAT WHICH GETS INTO THE GUT IS TAKEN INTO THE BODY) BUT IS NOT THE FORM INCLUDED IN PREPARED FORMULAS BY MOST MANUFACTURERS. THE REASON FOR THIS IS THAT IN PROCESSING OF CANNED FOODS, FERROUS SULFATE REACTS WITH OTHER INGREDIENTS AND INSOLUBLE FORMS OF IRON ARE CREATED. SO, A LESS AVAILABLE BUT MORE STABLE FORM, IRON CARBONATE, IS COMMONLY USED.

PEREGRINE RESTORATION CONTINUES

"Outdoor News Bulletin"

A GROUP OF CORNELL UNIVERSITY ORNITHOLOGISTS, AIDED BY STATE, FEDERAL, AND PRIVATE SUPPORT, ARE MAKING ENCOURAGING PROGRESS RESTORING THE ENDANGERED PEREGRINE FALCON IN THE WILD, ACCORDING TO THE WILDLIFE MANAGEMENT INSTITUTE.

SINCE 1973 THE PEREGRINE FUND HAS RAISED 68 PEREGRINES FROM CAPTIVE PARENTS. LAST SUMMER, 16 YOUNG PEREGRINES WERE RELEASED IN FIVE EASTERN AREAS WITH REMARKABLE SUCCESS SO FAR. THE GROUP HAS EXPANDED OPERATIONS TO THE WEST. SEVERAL PRAIRIE FALCONS HAVE BEEN RELEASED IN COLORADO AND THE WESTERN SUB-SPECIES OF PEREGRINE IS BEING PRODUCED FOR FUTURE RELEASES.

THE PEREGRINE FUND IS AN EXAMPLE OF SCIENTIFIC MANAGEMENT RESTORING A VALUABLE SEGMENT OF AMERICAN WILDLIFE. TAX-DEDUCTIBLE CONTRIBUTIONS TO THE PROJECT MAY BE SENT TO THE PEREGRINE FUND, 159 SAPSUCKER WOODS ROAD, ITHACA, N.Y. 14853.

KEEPERS AND COMMUNICATION by Judie Steenberg, Topeka Zoological Park, Topeka, Ks.

HAVE YOU EVER GIVEN SERIOUS THOUGHT TO YOUR ROLE AS A COMMUNICATOR? AS A KEEPER, YOU ARE THE LINK BETWEEN THE CARE OF THE ANIMALS IN YOUR AREA AND THE REST OF YOUR ZOO'S OPERATION, EITHER DIRECTLY OR INDIRECTLY. THERE ARE SEVERAL ORGANIZATIONAL STRUCTURES IN ZOOS AS WELL AS LEVELS OF ANIMAL KEEPING BUT THE KEY TO GOOD ZOO OPERATION IS THE ABILITY OF ITS PERSONNEL TO INTERACT AND COMMUNICATE.

COMMUNICATION IS THE CENTER OF HUMAN ACTIONS. TO COMMUNICATE IS: TO IMPART, MAKE KNOWN, TELL, TRANSMIT. WE COMMUNICATE WITH SPOKEN AND WRITTEN WORDS, THROUGH OUR ACTIONS AND ATTITUDES, OUR DRESS AND GESTURES. THE MOST BASIC AND DIRECT FORM OF COMMUNICATION IS "TALK". WE TALK AT, TO, OVER, ACROSS, DOWN, UP, PAST, AND THE MOST DIFFICULT (YET EFFECTIVE) FORM...WITH...PEOPLE.

IT IS IRONIC THAT SOMETHING SO MUCH A PART OF OUR LIVES CAN BE A MOST DIFFICULT PROBLEM, OFTEN IN OUR WORK. NEWSPAPER COLUMNIST SYDNEY J. HARRIS SAID "IT IS FAR EASIER TO RUN YOUR OCCUPATION OR PROFESSION IN A TECHNICAL SENSE THAN TO DEAL WITH ALL THE 'PEOPLE PROBLEMS'." IT IS NOT AN EASY TASK TO REALLY COMMUNICATE AND FOR SOME PEOPLE IT MAY TAKE EXTREME EFFORT.

COMMUNICATION IS OFTEN CONFUSED WITH INFORMATION, WHICH IS ALSO IMPORTANT - BUT DIFFERENT. INFORMATION CAN BE GIVEN WITH NO EXCHANGE OR SHARING OF IDEAS AND EXPERIENCES. ANOTHER EXPLANATION IS: MERE INFORMATION IS TELLING PEOPLE WHAT YOU FEEL THEY SHOULD KNOW; REAL COMMUNICATION IS TELLING OTHERS WHAT THEY NEED TO KNOW TO DO THEIR WORK WELL.

COMMUNICATION IS A PERSONAL AND VITAL THING AND CANNOT BE IGNORED. IT IS A PART OF ALL WE DO. IDEAS AND EXPERIENCES BECOME MEANINGFUL WHEN THEY ARE TRANSMITTED TO OTHERS. SINCE COMMUNICATION IS INEVITABLE (TO DO NOTHING IS STILL COMMUNICATING) HOW DO WE DEAL WITH IT? HOW CAN WE BECOME BETTER COMMUNICATORS?

EXPERTS IN THE FIELD OF COMMUNICATION HAVE GIVEN US GUIDE-LINES FOR GOOD COMMUNICATION. THEY ARE DESIGNED TO AID IN IMPROVING COMMUNICATION SKILLS. (CON'T NEXT PAGE)

1. CLARIFY YOUR IDEAS BEFORE COMMUNICATING - ANALYZE THE IDEA OR PROBLEM, CONSIDER GOALS AND ATTITUDES (YOUR'S AND RECIPIENT'S), DON'T FAIL BECAUSE OF INADEQUATE PLANNING.
2. WHAT IS THE TRUE PURPOSE OF THE COMMUNICATION? - WHAT DO YOU WANT TO ACCOMPLISH, IDENTIFY GOALS AND ADAPT YOUR LANGUAGE, TONE AND TOTAL APPROACH TO A SPECIFIC OBJECTIVE - DON'T TRY TO ACCOMPLISH TOO MUCH.
3. CONSIDER THE TOTAL PHYSICAL AND HUMAN SETTING WHENEVER YOU COMMUNICATE - IMPACT OF COMMUNICATION IS AFFECTED BY MANY FACTORS; TIMING, SETTING (PRIVATE OR SOCIAL), PAST PROCEDURES.
4. CONSULT WITH OTHERS, WHERE APPROPRIATE, IN PLANNING COMMUNICATIONS, SEEK PARTICIPATION AND CONSULTATION TO LEND INSIGHT AND OBJECTIVITY.
5. BE MINDFUL OF THE OVERTONES AS WELL AS THE BASIC CONTENT OF YOUR MESSAGE - TONE OF VOICE, EXPRESSIONS, YOUR RECEPTIVENESS TO THE RESPONSE OF OTHERS, ALL HAVE GREAT IMPACT.
6. TAKE THE OPPORTUNITY TO CONVEY SOMETHING OF HELP OR VALUE TO THE LISTENER - CONSIDER THE OTHER PERSONS INTERESTS AND NEEDS, SEE HIS POINT OF VIEW.
7. FOLLOW UP COMMUNICATIONS - FIND OUT HOW WELL YOU PUT YOUR MESSAGE ACROSS, GET FEEDBACK.
8. COMMUNICATE FOR TOMORROW AS WELL AS TODAY - PLAN WITH THE PAST IN MIND, BUT BE CONSISTENT WITH LONG RANGE INTERESTS AND GOALS.
9. BE SURE YOUR ACTIONS SUPPORT COMMUNICATIONS - MOST PERSUASIVE COMMUNICATION IS NOT WHAT YOU SAY BUT WHAT YOU DO.
10. BE A GOOD LISTENER - UNDERSTAND AS WELL AS BEING UNDERSTOOD, TUNE IN TO OTHERS.

NOW THAT WE HAVE ADDRESSED THE QUESTIONS OF WHAT COMMUNICATION IS AND HAVE GUIDE-LINES ON HOW TO ACCOMPLISH IT; THE WHEN, WHERE, AND WHY SHOULD BE CONSIDERED. IN THE NEXT ISSUE OF AKF WE'LL COVER "IN-HOUSE COMMUNICATIONS".

THE FOLLOWING PUBLICATIONS ON ANIMAL CARE ARE AVAILABLE FROM THE U.S. DEPT. OF AGRICULTURE. WRITE UNITED STATES DEPARTMENT OF AGRICULTURE, AGRICULTURAL MARKETING SERVICE, INFORMATION DIVISION, 1100 COMMERCE STREET, RM. 5-C40, DALLAS, TEXAS 75202.

REGULATIONS UNDER THE ANIMAL WELFARE ACT OF 1970... "TITLE 9, ANIMALS AND ANIMAL PRODUCTS, CHAP. 1, SUBCHAPTER A--ANIMAL WELFARE"
REGULATING CARE OF EXHIBIT ANIMALS, NARRATION FOR A SLIDE SET, JULY '74
ANIMAL WELFARE... LIST OF LICENSED EXHIBITORS
LICENSING AND REGISTRATION UNDER THE ANIMAL WELFARE ACT, SEP. 1975
ANIMAL WELFARE ACT OF 1970

SUGGESTED READING from "Outdoor News Bulletin"

THE WILDERNESS HOME OF THE GIANT PANDA BY WILLIAM G. SHELDON

192 PAGES. PUBLISHED BY THE UNIVERSITY OF MASSACHUSETTS PRESS, AMHERST, MASSACHUSETTS 01002; 1975. PRICE \$12.50

ALTHOUGH THERE HAVE BEEN SEVERAL BOOKS ON THE BEHAVIOR OF THE GIANT PANDA IN THE ZOO ENVIRONMENT, THIS IS THE ONLY STUDY OF THE PANDA IN ITS WILD AND NATURAL HABITAT IN WESTERN CHINA. IT IS ALSO A RARE LOOK AT A LITTLE-KNOWN PART OF ASIA.

BASED ON HIS EXPERIENCES DURING A PRE-WORLD WAR II EXPEDITION INTO THE REMOTE HIGH MOUNTAIN COUNTRY OF CHINA, NATURALIST WILLIAM SHELDON HAS WRITTEN FAR MORE THAN A SCHOLARLY TRACT ON PANDAS. HIS FIRST-HAND ACCOUNTS OF THE LAND AND ITS PEOPLE, AND THE DIFFICULTIES OF DOING FIELD RESEARCH IN AN AREA WHERE NO WESTERNER HAS BEEN SINCE THAT TIME, ARE OF EXTRAORDINARY VALUE.

MUCH OF THE BOOK IS WRITTEN IN NARRATIVE STYLE, WITH FASCINATING DESCRIPTIONS OF TRACKING PANDAS IN THE SNOW, THE OTHER MAMMALS AND BIRDS THAT SHARE THE HABITAT WITH THE GIANT PANDA, AND DETAILS OF THE GENERAL ECOLOGY OF THE WILD AND BEAUTIFUL REGION KNOWN AS "PANDA COUNTRY". THE WORK IS GENEROUSLY ILLUSTRATED WITH PHOTOGRAPHS AND DRAWINGS.

THE CHEMICAL CAPTURE OF ANIMALS BY A.M. HARTHOORN

400 PAGES. PUBLISHED BY BAILLIERE TINDALL (A DIVISION OF CASSELL AND COLLIER MACMILLAN PUBLISHERS LTD.), 7 & 8 HENRIETTA STREET, LONDON WC2E8QE, ENGLAND; 1975

ONCE PAST AN AMUSING PREFACE WHICH WASTES MUCH TIME AND PAPER LECTURING PROFESSIONAL WILDLIFE MANAGERS TO VIEW ANIMALS AS INDIVIDUALS RATHER THAN POPULATIONS, HARTHOORN'S BOOK CONTAINS SOME IMPORTANT INFORMATION APPLICABLE TO THE U.S. REMEMBERING THE 1950'S WHEN JACK CROCKFORD, FRANK HAYES, JIM JENKINS, AND RED PALMER WERE DEVELOPING THE FIRST SO-CALLED CAPTURE-GUN AND THE DRUGS TO USE IN IT, THE SCIENCE AND ART OF ANIMAL CAPTURE HAS COME A LONG WAY.

ALTHOUGH HARTHOORN'S BOOK DEALS MAINLY WITH CAPTURE OF AFRICAN SPECIES, THERE IS MUCH INFORMATION OF BROADER INTEREST.

AAZK AND AKF T-SHIRTS AVAILABLE

T-SHIRTS WITH THE AAZK LOGO AND THE AKF LOGO ARE AVAILABLE THRU THE KEEPERS AT THE SEDGWICK COUNTY ZOO IN WICHITA, KS. AAZK SHIRTS CAN BE PRINTED IN BLUE OR WHITE INK AND AKF SHIRTS ARE AVAILABLE IN BLACK INK ONLY.

SHIRT COLORS ARE DARK BLUE, LIGHT BLUE, GOLD, WHITE AND OLIVE GREEN AT A COST OF \$4.50 EACH.

\$1.00 OF THE AKF SHIRTS WILL BE CONTRIBUTED TO THE INTERNATIONAL SPECIES INVENTORY SYSTEM (ISIS).

\$1.00 OF THE AAZK T-SHIRTS WILL GO TO AAZK. ORDERS AND CHECKS SHOULD BE SENT TO THE ATTENTION OF MARK SCOTT, AAZK CHAPTER, SEDGWICK COUNTY ZOO, 5555 ZOO BLVD., WICHITA, KS. 67212. BE SURE TO STATE SIZE. (S M L XL)



WHOOPIING CRANE BATTLES SUCCESSFUL

1975 WAS A GOOD YEAR FOR WHOOPING CRANES. THEIR NUMBERS SOARED TO AT LEAST 83, INCLUDING 12 JUVENILES...BOTH RECORDS...DURING THE YEAR.

ON THREE SEPARATE FRONTS, U.S. AND CANADIAN BIOLOGISTS FOUGHT TO SAVE THE WHOOPING CRANE FROM EXTINCTION. IF THIS YEAR'S SUCCESSES ARE ANY INDICATION OF THE FUTURE, IT LOOKS AS THOUGH THEY MIGHT WIN. THE SUCCESSES INCLUDE:

- ...THE START OF AN EXPERIMENT TO ESTABLISH A SECOND POPULATION OF THE CRANES IN THE WILD AS INSURANCE AGAINST THE POSSIBILITY THAT A HURRICANE, OIL SPILL, OR OTHER DISASTER WOULD WIPE OUT THE ENTIRE FLOCK;
- ...THE FIRST HATCHING OF A CHICK FROM CAPTIVE-REARED BIRDS AT THE U.S. FISH AND WILDLIFE SERVICE'S PATUXENT WILDLIFE RESEARCH CENTER;
- ...THE SURVIVAL OF A NEAR-RECORD EIGHT WHOOPING CRANE CHICKS HATCHED BY THE 48-BIRD WILD FLOCK IN CANADA'S WOOD BUFFALO PARK.

FALCONRY REGULATIONS ISSUED

NEW REGULATIONS REQUIRING FEDERAL PERMITS FOR FALCONERS AND SETTING UP STANDARDS FOR FALCONRY BECAME EFFECTIVE ON FEBRUARY 17, ACCORDING TO THE WILDLIFE MANAGEMENT INSTITUTE. THE REGULATIONS REQUIRE THAT PERSONS ENTERING THE SPORT HAVE A BASIC KNOWLEDGE OF RAPTOR IDENTIFICATION, BIOLOGY, REGULATIONS, CARE, AND TRAINING. THEY ESTABLISH THREE CLASSES OF FALCONRY PERMITS DEPENDING UPON LEVEL OF COMPETENCE: APPRENTICE, GENERAL, AND MASTER. THEY ALSO SET HOUSING AND MARKING REQUIREMENTS FOR RAPTORS AND IDENTIFY SPECIES AND NUMBER OF BIRDS WHICH CAN BE USED FOR SPORT. FINALLY, THEY ESTABLISH MINIMUM STANDARDS TO BE USED BY THE STATES FOR ISSUING THEIR PERMITS.

EAGLE PORTRAIT OFFERED FOR SALE

A PORTRAIT OF THE BALD EAGLE HAS BEEN OFFERED FOR SALE BY THE U.S. FISH AND WILDLIFE SERVICE. IT IS A FULL COLOR, HEAVY PAPER REPRODUCTION, $8\frac{1}{2}$ BY 11 INCHES ON A MAT $11\frac{1}{2}$ BY 15 INCHES, OF AN OIL PAINTING BY FISH AND WILDLIFE SERVICE ARTIST BOB HINES. IT MAY BE OBTAINED BY SENDING \$1.85 TO THE SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402, AND REQUESTING THE "SYMBOL OF OUR NATION" PORTRAIT, STOCK # 024-010-00408-8.

THE KEEPER IS OUT!!

IF YOU HAVE NOT YET RECEIVED YOUR COPY OF THE KEEPER VOLUME 1, 1975 PLEASE LET US KNOW. THE JOURNAL WAS MAILED TO ALL 1975 MEMBERS AND AKF SUBSCRIBERS. NEW MEMBERS FOR 1976 AND THOSE WISHING EXTRA COPIES MAY ORDER A COPY OF THE JOURNAL BY SENDING \$5.00 TO: AAZK JOURNAL, 635 GAGE BLVD., TOPEKA, KS. 66606. (MAKE CHECKS PAYABLE TO ANIMAL KEEPERS' FORUM)

***** AAZK '76 Conference *****

WILL BE HELD IN SAN DIEGO, CALIFORNIA FROM AUGUST 23 - 27. CONFERENCE HEADQUARTERS WILL BE THE SHERATON AIRPORT INN ON SHEL HARBOR ISLAND IN DOWNTOWN SAN DIEGO. THE REGISTRATION OF \$30.00 PER PERSON WILL INCLUDE BANQUET, COCKTAIL RECEPTION, LUNCHEONS, ETC..

THE ROOM RATES ARE AS FOLLOWS: SINGLES - \$21.00, TWIN OR DOUBLE - \$26.00, SUITES - \$75.00 (THE RATES DO NOT INCLUDE ROOM TAX).

MIKE DEE AND STEVE TAYLOR WILL BE HANDLING THE CONFERENCE PROGRAM. MATERIAL FOR THE PROGRAM SHOULD BE SENT TO MIKE AT 1141 WESTERN AVE., GLENDALE, CA 91201.

THOSE WISHING TO PRESENT PAPERS, SLIDES OR FILMS SHOULD SEND INFORMATION ON THE TITLE, SUBJECT OF MATERIAL AND EQUIPMENT REQUIRED AS SOON AS POSSIBLE TO MIKE.

THOSE WHO DESIRE TO INCORPORATE A FAMILY VACATION INTO THE CONFERENCE TRIP SHOULD BE REMINDED THAT THE HOTEL DOES NOT ALLOW CAMPING OR OVER-NIGHT PARKING IN THEIR PARKING LOT. THE ADDRESSES OF TWO CAMPING GROUNDS LOCATED NEAR THE HOTEL ARE: MISSION BAY CAMPLAND, 2211 PACIFIC BEACH DR., SAN DIEGO, CA 92109 AND K.O.A., SAN DIEGO METROPOLITAN, 3601 EDMERE, SAN DIEGO, CA 92010.

MIKE DEE HAS SCHEDULED A SPECIAL POST-CONFERENCE TOUR OF THE LOS ANGELES ZOO, FOR THOSE WHO CAN STICK AROUND AFTER THE BIG MEETING.

THOSE WHO WOULD LIKE TO PRESENT BUSINESS BEFORE THE BOARD OF DIRECTORS OR THE GENERAL MEETING, PLEASE SEND NOTIFICATION OF YOUR DESIRED BUSINESS TO AAZK HQ. MAIL TO AAZK HEADQUARTERS, 635 GAGE BLVD., TOPEKA, KS. 66606.

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ANIMAL KEEPERS' FORUM



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QUESTIONS FOR DR. PATTON'S NUTRITION COLUMN SHOULD
BE SENT TO THE AKF EDITORS.

FOR INFORMATION CONCERNING MEMBERSHIP IN THE AMERICAN ASSOCIATION OF ZOO KEEPERS WRITE TO: AAZK NATIONAL HEADQUARTERS/ 635 GAGE BLVD. TOPEKA, KS. 66606.

CAPTIVE BREEDING OF WOOLLY OPOSSUMS by Robert R. Peel, Calgary Zoo

Last spring two female woolly opossums were born at the Calgary Zoo. They were mother-raised to maturity.

Captive births of this species are rare. Results will be published, but first we hope to contact all institutions that are keeping this animal or who have kept the species in the past. We know of two zoos - San Francisco and New York, and one university - U. of California.

Keepers who are aware of any other institution that has had experience with *Caluromys* are urged to write to:

Robert R. Peel, Calgary Zoo & Natural History Park, St. George's Island, Calgary, Alberta, Canada. T2G 3H4

NEW CURATOR APPOINTED

Kevin Bell, 2424 N. Clark St., is the new Bird Curator at the Chicago Park District's Lincoln Park Zoo. Bell replaces Bob Hinckley, who is now director of Williams Park Zoo in Providence, R.I.

THE BRONX ZOO AND SNAKEBITE

One of the ultimate hazards of a reptile keeper's job is venomous snakebite. The Bronx Zoo Reptile House recently began preparation for such a dreaded eventuality. All five keepers, along with the Zoo's Associate Curator of Reptiles have undergone training at New York's Roosevelt Hospital in the intravenous injection of antivenins. Other precautions are also taken. During working hours there is always a minimum of two keepers in the building. Keepers maintain identification cards and handling records religiously and with the utmost accuracy. A card for each snake is kept on the back of its exhibit door. Each door is clearly labelled "THINK BEFORE YOU OPEN". An alarm button is placed on the wall next to every enclosure. Fortunately, none of the present keeper staff has ever been envenomed, despite fifty years of collective service.

***** ANIMAL KEEPERS' FORUM *****
GUEST EDITORIAL

KEEPER PROFESSIONALISM by Vernon Kisling, Research Curator, Crandon
Park Zoological Garden, Miami, Fl.

There is a great deal of discussion about professionalism in this day and age. It is an issue that concerns many corporations, associations, and individuals. The AAZPA, the AAZK, and their members are no exceptions. The AAZV has an edge on professionalism since its members are veterinarians, as perhaps the AAZPA now does as well (points that may be debatable based on one's own personal experiences).

But what about the keepers, both in and out of the AAZK? Is it possible for keepers to be professional, and is zookeeping a profession? To answer these questions, one must have a knowledge and an understanding of the terms profession and professionalism - it must be recognized that these terms are only words used to describe concepts, and concepts are individualized, each person having his/her own.

To me, a profession is one's work irrespective of the place where the work takes place. In the case of keepers, the profession would be the captive care and maintenance of animals, irrespective of the zoological park, aquarium, etc. where one is employed. This involves feeding, cleaning, working with and around animals, and caring about the animals' health and general well being.

To demonstrate professionalism, it is essential to not only perform these professional duties, but to perform them as best one can, meeting standards established by those in the profession or those established on one's own - if this is felt to be necessary. There are few, if any, zoological parks that are mistreating their animals. However, the professional question to be asked is, to what extent are zoological park staffs properly treating their animals. That is, to what standards (to what degree of correctness), if any, are animal collections being maintained?

This has become a severe point of conflict in several zoological parks of late. It is a professional problem involving the setting of appropriately high standards without exceeding the point of irrationality. It is an issue which is seen differently by zookeepers and by zoo administrators. It is an issue I feel could be resolved, but it requires a professionalism on the part of the zookeeper and the zoo administrator that goes much deeper than that which has been briefly described here.

It requires a professionalism that contains a respect, trust, and ethical concern for not only one's work, but also for one's fellow workers. And to me, the captive care of wildlife is a team effort - a single profession. Education, research, veterinary care, administration, etc. should be secondary professional concerns to those persons working in zoological parks and aquariums.

As a team effort, the current professional standards conflict (i.e. are the animals being cared for as best they should be or could be) should be settled through appropriate modes of conflict resolution within each zoological park/aquarium. Everyone insists that they care more about the animals than the next fellow. It is time to demonstrate this concern in a responsible manner and it should be up to the administrators to take the initiative and to provide the guidance in these matters.

For keepers do have a profession, and it is the same as that of the administrators. Whether there is any professionalism involved (on the part of the keeper and on the part of the administrator) will depend on the attitude and concern demonstrated in solving zoo-related problems in order to improve the general well being of the animals.

Education, keeper training, zoo experience, and life experience will help to improve the keeper's ability to perform professionally, however, it is up to each individual keeper to actually demonstrate his/her professionalism. Just as important, however, is the need for zoo administrators to allow the keepers to demonstrate their professionalism through appropriate respect, trust, concern, dissemination of responsibility, and opportunities for individual growth and self-actualization.

AAZK CHAPTER INVENTORY

Dennis Grimm of the Brookfield Zoo and Coordinator for Chapter Affairs will be compiling an inventory of all the AAZK Chapters in the country. He requests that the presidents of each chapter submit the following information to him at the Brookfield Zoo, Brookfield, Ill. 60513: total membership; approximate active members; present officers in the chapter; function of chapter, including.... meetings, past, present and future projects; insight on the chapter's future involvement in national AAZK affairs; degree of cooperation with host zoo.

Please try to include all the above information on one typewritten page, keeping to general concepts. Thank you.

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DEADLINE FOR THE MAY ISSUE OF AKF IS 20 APRIL.....

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VASECTOMY OF AN AFRICAN LION by Barbara Osborne, Glen Oak Zoo,
Peoria, Il.

Due to the problems we have encountered with the pregnancies of our lioness and to the availability of young, our zoo veterinarian, Dr. N. Earp, advised that a vasectomy should be performed on our male lion. The operation was performed on the morning of December 11, 1975, with the staff of the Glen Oak Zoo, Peoria, Illinois, assisting Dr. Earp.

Nero, our five year old male, was kept off feed the day before and was isolated in a specially modified cage prior to beginning the tranquilization. At 10:32 AM Nero was given 50 mg. of Tranvet orally. The drug caused him to become drowsy but he would not transfer to our "Lab Care" feline squeeze cage. Therefore at 10:45 AM, 50 additional mg's were administered orally. Nero became indifferent to the staff

around his cage but remained on his feet. At 11:00 AM Nero was run into the squeeze cage with a small bribe of feline diet. At 11:11 AM, 25 cc of atropine and 25 cc of ketamine were administered IM. At 11:20 AM an additional 10 cc of ketamine were administered as Nero was still responding to stimulus. At 11:25 AM Nero's hindquarters were pulled partially out of the squeeze cage. Dr. Earp prepared the scrotal area and made the first incision at 11:30 AM. Due to the large amount of connective tissue some difficulty was encountered in locating the vas deferens. After it was found, it was tied off at two locations approximately 1" apart. The ligated portion was then removed. After closing the first incision a second one was made and the same procedure was followed again. The total time for the surgery was approximately 45 minutes.

Blood samples were drawn from a vein in the right rear leg at 12:15 PM. At this time antibiotics were administered IM. Nero was then placed back in the squeeze cage. Due to the lack of an accurate weight it was then decided to weigh Nero and squeeze cage on a floor platform balance scale. Nero weighed in at $444\frac{1}{2}$ pounds with the squeeze cage weighing $282\frac{1}{2}$ pounds.

At 12:40 PM Nero was pulled from the squeeze cage into his enclosure. During this time he was already lightening up and showing signs of awakening. At 3:15 PM Nero began making attempts to sit up.

On December 12, Nero was still noted to be groggy but up and on his feet. He was fed half of his routine diet which he promptly consumed.

On December 13, Nero was fed his full diet and was noted to be almost normal. He was observed passing normal stools and urine late on this date. The scrotal area was only slightly swollen and was normal on the 14th.

For further information, Dr. Earp will be writing a detailed account for the AAZV Journal and can be contacted c/o the Glen Oak Zoo, Peoria, Illinois. *

*(Author's note) As of December 20, 1975 Nero has been returned to joint quarters with our female African Lion. Active breeding was last noted on January 25, 1976 with no changes in behavior observed. We are now waiting to see if all went as it should have.

ANIMAL NUTRITION by Dr. Richard S. Patton, Director of Professional Education, Mark Morris & Associates, Topeka, Ks.

Question: Describe the various "hays" used for feeding and the desirability (nutritional and otherwise) of each type.

Answer: Although there are many varieties of hays, two basic classifications are possible: grass and legume. Legume hays are always higher in protein (15%) than grass hays (3-9%) and legume hay is often all that is needed to maintain adult hoofstock. Legume hay is often all that is needed to maintain adult hoofstock. (Yes, you did just read the same sentence twice; it was not an error. It is hoped you will remember it.)

I urge you to read in Crampton and Harris (Applied Animal Nutrition 2nd ed., W. H. Freeman and Co., 1956) the discussion on "Concentration of Nutrients in Roughage", page 286. Basically, it is shown that a dairy cow giving 44 lb. of milk (4% fat) per day can meet her nutritional needs with good quality alfalfa or clover hay. This cow has energy and nutrient needs greatly in excess of virtually all zoo hoofstock.

I'm sorry to digress from answering the question. I couldn't resist the opportunity to indicate that many zoos overfeed protein and concentrates to their hoofstock.

The quality of a hay, grass or legume, is determined by when the hay is cut; the older the hay, the lower the protein and higher the fiber. A delay in cutting of only ten days can increase stem weight 30%. The best quality hay can be made only from a crop cut well before maturity.

The first reason for this is that young plants are a higher percentage leaves, which are of better nutritional value than stems. The quality of all leaves are about the same. The difference in hays is due mostly to the amount of leaves per pound of dry hay. At the stage of maturity necessary for the best hay, the leaf in timothy (a grass) is about 30%, in clover 40% and alfalfa 55% (legumes).

The second reason early cutting is important is because lignin, an insoluble compound, is laid down in any area of a plant that has stopped growing.

Poor quality hays do not support maximum bacterial growth in the rumen. This leads to a more serious secondary problem, a decline in roughage consumption. The downward spiral that can ensue is obvious.

But, how does one recognize quality hay? For those really interested (as I hope all hoofstock curators and keepers are!) there is most likely a land grant university in your state. It is state funded and under an obligation to serve its citizens. Go to the agronomy department and request a short education in hay judging. (Some schools even teach a course in it.) In an hour or less, you should be in a position to evaluate all hay your zoo buys.

Question: I would like to know how much vitamin supplement a Humbolt penguin needs. We have 5 penguins on a diet of smelt and they are receiving 3 Vigran pills per bird daily. This seems a lot to me.

Answer: In checking the potency of the three types of pills marketed under the trade name of Vigran, it is apparent one is half the strength of the basic formula (and recommended for children), while the other simply contains the basic formula plus iron.

The exact micronutrient requirements of the penguin (to say nothing of a Humbolt penguin) are not known. Under the circumstances, the best that can be done is compare with a reasonable known reference. Knowing the needs of some other bird admittedly may not be very reassuring, but it certainly allows more confidence than a blind guess. Three Vigran pills would provide 15,000 I.U. of vitamin A per penguin. The smelt easily doubles this to 30,000 I.U./bird/day. A chicken (non-laying adult hen) requires 4,000 I.U./kg. of feed and will eat 0.1 or less kilograms/day, or 400 I.U./day. Therefore, if you gave smelt and three Vigran pills to a chicken, you would exceed its vitamin A requirement by 75 times. Using the same logic for vitamin D, 50 times the needed amount is given. For thiamin, 112 times.

I know a chicken is a physiological artifact, almost as low as a turkey, and certainly not a penguin. However, to answer your question, you err on the side of safety. Give one pill a day to each bird, and give it at a different time than the smelt, if possible.

THE BEGINNING OF R.A.P.

Members of the herpetology staff of the National Zoological Park will be starting a new column for AKF. The column will be titled Reptile and Amphibian Potpourri (R.A.P.). The writing staff will include keepers Bela Demeter, Sam Davis, Brenda Hall and Trooper Walsh. Also contributing will be Dr. Dale Marcellini, Research Curator of Herpetology, Michael Davenport, Curator of Reptiles and Amphibians, and Jaren Horsely, General Curator. The writing staff will maintain close communications with herpetologists in the Division of Reptiles and Amphibians, U.S. Museum of Natural History.

The writers ask for notes, suggestions and ideas dealing with reptile husbandry. Questions or comments concerning reptile pathology may also be sent, as the National Zoo maintains an excellent pathology department. The submitting author need not prepare a formal article. Material for the column may be sent to Bela Demeter, 4593-2 MacArthur Blvd., N.W. Washington, D.C., 20007.

REPTILE FEEDING by Bela Demeter, National Zoo

One of the most frustrating aspects of reptile management is feeding and nutrition. It's often hard to induce herps to feed; even when they look like they are doing well they either get fat or die and the autopsy reveals malnourished organs. One problem we have had for some time at the National Zoo is calcium deficiency in Geckos. At the AAZK convention in Chicago, Ray Pawley advised me to supplement their diet with the following mixture; egg yolk (2 tsp.), honey ($\frac{1}{2}$ tsp.), molasses ($\frac{1}{8}$ tsp.), and Vitamin D₃ (25,000 IU's). This was a good start on what may be part of the solution to this problem.

All our insectivorous lizards are fed crickets sprinkled with a Pervinal-Calcium carbonate mixture twice a week. Every other week grubs are hatched out and the flies are fed to those that will eat them. All geckos and anoles are offered the supplement and they usually lick it up.

Sometimes a simple solution to a feeding problem can be obscured by habit. We used to feed our Gila Monsters and Tegus Lizards feline diet with egg yolk, which, although eaten readily, caused obesity in both. (The Tegus were living two years at the most.) So we switched to whole mice. Neither the Tegus nor the Gila Monsters could be induced to feed after being used to the ground meat and egg yolk. After several months of staying with an occasional meal of feline diet while trying to get them on whole mice it occurred to me to try chopping the mice up and putting egg yolk on top.

The Gila Monsters went for it immediately and soon they were eating whole mice without the egg. (They still get egg yolk occasionally.) It sounds simple, but it took me some time to think of it.

I've always been disappointed by the lack of reptile notes in the newsletter. I know there's a lot more going on in herp collections than you'd guess by reading AKF.

Reptile husbandry is often a touch-and-go thing, but I know that with just a little effort much of it can be communicated. I for one would like to read about experiences others are having keeping reptiles alive. Maybe it won't take me three months to figure out how to get a Gila Monster to eat next time.

::

4TH GENERATION BLACK LEOPARDS BORN AT LINCOLN PARK ZOO

A pair of fourth generation Black Leopard cubs were born Feb. 23 at Lincoln Park Zoo. The cubs, one male and one female, were born to Carla and Duke, four-year-old adult Black Leopards.

The cubs were taken from their mother in the Lion House and will be raised by hand in the Zoo Nursery in the Children's Zoo.

In 1974, Lincoln Park Zoo received an AAZPA award for the breeding and raising of third generation Black Leopards.

LETTER TO THE EDITORS:

I am writing this in response to Mr. Coker's letter in the January, 1976 AKF.

First of all, let me state that few, if any, zoos deliberately "experiment" on wildlife with hybridization as the intended goal. Mr. Coker, you stated in your letter - "In most zoos in this country, hybridization should not be an encouraged practice." I agree, hybridization should not be encouraged in any zoo, and it certainly isn't at the Atlanta Zoo.

This hybrid Gibbon/Siamang birth was in no way planned by any of the zoo staff. The animals involved are not owned by the zoo, but by a professor at Georgia State University, who wished that they remain together while on loan to the zoo.

The staffs of both G.S.U. and the Yerkes Primate Center have been examining this hybrid quite closely - as a chromosome count difference of six between the parents made conception highly unlikely. These studies, as well as other notable findings, could well result in the reclassification of the family Hylobatidae. Such reclassification would be of great importance and benefit to any zoo or institutions that maintain any of the species included in this group.

The Atlanta Zoo does not indulge in a "circus" or "freak show" manner to attract visitors by displaying "oddities." In truth, the only publicity given to this animal was in the November AKF. The public was never told of its existence, and the animal is not on public display. If the general public is to be told anything, it is that this event shows that we still have much to learn about animals, both wild and captive.

Alan Sharples

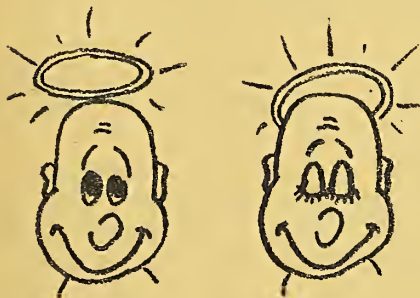
Alan Sharples
Senior Keeper, Primates
Atlanta Zoo

A NOTE OF CONGRATULATIONS AND REPRIMAND

I would like to take this opportunity to congratulate the AKF staff, especially Ron Kaufman and Chris LaRue, for the fine job they did in getting together The Keeper. I feel that if every member of the association did a fraction of the work that these people do this organization would be in far better shape than what it is in. This is supposed to be an association of animal keepers, however, if there isn't a change in attitude among members and non-members that are zoo keepers this organization is doomed. The losers are all of us. For the association to be a viable, informative organization there must be participation on a large scale by every member. The more members who participate, the more we all benefit.

Randy McGill

Randy McGill
Detroit Zoo
Detroit, Mi.



COLOBUS MONKEY BORN

Almost one year to the day, the Los Angeles Zoo Kikuyu colobus monkey colony has another baby in its family.

Captive births of this species are significant, as the colobus is delicate to maintain in captivity and colonies are difficult to establish. This infant is one of several born at the L.A. Zoo.

It is not unusual for family members other than the mother to be seen carrying the infant. The colobus monkeys keep close family units.

A MATE ARRIVES by Randy McGill, Detroit Zoo

The first snow leopard (*Panthera uncia*) born at the Detroit Zoo (see The Keeper, vol. 1, 1975) got a mate on 20 January, 1976, when a male arrived from the Milwaukee Zoo. This was the first time the female had seen a member of her own species. The new pair did not show great delight at seeing each other.

Upon his arrival, the male's crate was secured to the cage of the female for a get acquainted period. However, the female avoided looking into the crate, and the male showed no interest in the female. Three days later, the arrangement was changed. The male was placed in an adjoining cage. This time, the female paced on the far side of her cage away from the male and the male layed in a corner...uninterested in his new companion. Except for a couple of snarls, their interest in each other remained unchanged.

Before the arrival of the male, the female was eating 36 oz. of C/D (Hill's) per day. On 20 January, the food was reduced to 31 oz. and a little was left in the pan. On 22 January, the female ate all 31 oz. The day the male was placed in the adjacent cage (23 January), she ate all her morning feed (15½ oz.) but in the afternoon, she ate only 14 oz. of the 22½ oz. given. She ate 10 oz. in the morning of 24 January and 7 oz. in the afternoon. Obviously, the female went off feed, while her companion consumed 48 oz. of Feline Diet each day. The next day her consumption increased and on 28 January, she was cleaning up nearly all food offered. Her ration was steadily increased through 1 March, at which time she was eating 46¼ oz. The disruption of her normal routine had apparently passed. The next hurdle to be cleared comes when the two are actually put together.

KEEPERS AND COMMUNICATION (In-House Communications) Part 1
by Judie Steenberg, Topeka Zoo

In the last issue of AKF, guidelines from Aurner and Wolf (1967) were given to help identify the steps that should be taken to get the most out of communicating.

Let's now consider communications in a zoo situation. There are two major factors that affect keepers and communications. One is the policy of the zoo and the administrative staff in providing the means for communications within the zoo's operation. Does the keeper have the opportunity to exchange ideas and information with co-workers and the administrative staff, to record important observations and data for the zoo's permanent record, or to be involved with the zoo's volunteers and visitors? Is the keeper encouraged to develop as a communicator within his/her own zoo and with other zoos? All of these things have an important effect on the success of a keeper's communicative efforts. But, even in an ideal zoo, with all of these avenues open, the key factor is the attitude of the keeper. Unless an effort is made on the part of the individual, none of it means much. It is a fact of life that nothing is accomplished without effort. Good relationships among keepers and administrative staff do not just happen, they're developed through communication. Albeit, there are zoos where this is not possible, but generally, where effort is made success follows. You can communicate successfully if you use the right approach, have the proper attitude and, if necessary, try hard enough.

For those who work in zoos that realize the value of good keepers, the possibilities of communication are many. Zoo records are the first area of input. It is hard to imagine that something has not happened during a day that is not worth noting. Perhaps it does not require an entry on the zoo's records, but, then again, maybe it does. Keepers must develop skills to perceive, interpret and apply information about the animals in their care. Perception means noticing, observing, listening to, and realising what's taking place. A new keeper must develop this ability while long-time keepers must take care not to become callous or oblivious to what's happening. Interpretation means analyzing information according to importance and relevance. The application of information can be by oral or written communication or through performance. Performance? - Yes, how a keeper transfers or relates information to the daily performance of caring for animals. This could take the form of training a new keeper or of working well with co-workers. Probably the single most effective means of communication is making entries on the zoo's records. "Many species of animals owe their existence today to facts learnt about them in zoological institutions." (Hediger 1964). An article by Peel (1975) of the Calgary Zoo gives a good overview of the major aspects in the field of zoo records. (con't next month).

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ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

VOLUME III NUMBER 5

MAY 1976



ANIMAL KEEPERS' FORUM

EDITED BY RON KAUFMAN AND CHRIS LARUE

TOPEKA ZOOLOGICAL PARK 635 GAGE BOULEVARD TOPEKA, KANSAS 66606

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DEADLINE FOR THE JUNE ISSUE IS 20 MAY

STRIKE AT THE SAN FRANCISCO ZOO

Keepers at the San Francisco Zoo have been on strike since 31 March. The zoo employs about 28 keepers and all but five are members of the union local. According to Tony Bila, shop steward, one man is being allowed to cross the picket lines to care for a nene goose that is being hand-raised. Bila also said that union members will be able to return to the zoo in event of an emergency.

Saul Kitchener, zoo director, said the zoo has been closed to the public. He added that the zoo is being cared for by administrative staff and the five non-union keepers.

The only problem being alluded to is the accumulation of trash, since trash collection personnel are not crossing the picket lines.

+++++

ADDAX, ORYX ON THE BRINK from the IUCN Bulletin

The remaining populations of addax and scimitar-horned oryx are being reduced so fast that in five years they will be beyond recovery, IUCN surveys reveal. In Sudan, addax and oryx are so scarce that they are probably irrecoverable already.

Surveys of actual and potential habitats of the two species in Chad, Mauritania, Niger and Sudan were carried out by IUCN in 1975 with support from the World Wildlife Fund and other organizations. A panel of experts met with the IUCN surveyors on 22 January, and agreed that "the situation is even more serious than expected". Immediate action is needed if viable populations of addax and scimitar-horned oryx are to persist.

The objectives of the surveys were: to identify the areas in the Sahara Desert and Sahelian zone where addax, oryx and associated species (such as dama gazelle and dorcas gazelle) still live; to determine those areas most suitable for protection; to suggest additional protective measures; and to prepare for more detailed studies on a country-by-country basis.

FROM AAZK HQ by Rick Steenberg, Executive
Secretary, Topeka, Ks.

AAZK BOARD NAMES EXECUTIVE OFFICERS

The Board of Directors, in accordance with Constitutional requirements, has elected from among its members a President and a Vice President. Elected President was Bela Demeter, of the National Zoological Park, Washington, D.C. Elected Vice President was Chris LaRue, of the World Famous Topeka Zoo, Topeka, Kansas. Let's all lend our support as they guide the Association for the next two years.

SWEENEYS TO RECEIVE HONORS

Dick Sweeney, long time Executive Secretary of AAZK and his loyal and long-suffering wife, Virginia have, by unanimous decision of the Board of Directors, been granted life membership in the Association. It was felt appropriate, in recognition of the eight years of hard work they both put into the Association.

FIRST QUARTER FINANCIAL REPORT, AAZK

<u>Item</u>	<u>Credit</u>	<u>Debit</u>
Actual Bank Balance, 1 Jan. 1976	\$1434.94	
Postage		\$ 213.36
Deposits, Dues & Patches	3524.00	
Printing (Envelopes)		25.36
Refunds (Pro Rated Memberships)		75.00
Animal Keepers' Forum Account		1665.00
San Diego Conference Expenses		75.00
Bank Charges (Foreign Checks)		19.34
Deposit on 660 Shoulder Patches		250.00
Typewriter, Coronamatic Portable		160.00
Filing Cabinet		20.70
Miscellaneous Office Supplies		4.60
	<u>\$4958.94</u>	<u>\$2508.36</u>
	-2508.36	
Cash assets, 31 Mar. 1976	\$2450.58	

AAZK BUSINESS MEETING

There will be a general membership meeting during the course of the San Diego Conference, at which business of the Association will be conducted. Come prepared to participate. We WANT you to. Meanwhile, items of business relating to the Constitution must be submitted first to the Board of Directors. If possible, please send your ideas and/or suggestions to headquarters prior to the 15th of July so that Board Members might ruminate on them prior to the Board meeting at San Diego. (See inside back page for more Conference info.)

#####

FIRST QUARTER FINANCIAL STATEMENT (1976), AKF by Vicky LaRue, Topeka Zoological Park

<u>Item</u>	<u>Credit</u>	<u>Debit</u>
Cash on hand 31 December 1975	\$ 373.31	
AAZK memberships	2080.00	
AKF subscriptions	170.00	
Printing supplies (surplus sold)	12.76	
Typewriter sold	160.00	
THE KEEPER- Income from sales	35.00	
Printing supplies		\$ 323.83
Postage: Misc.		8.47
Canada, foreign		78.05
Bulk deposit Jan. - Mar.		112.12
Annual bulk fee		40.00
Office supplies		40.11
National Wildlife Federation Conservation Directory		3.00
THE KEEPER - printing and mailing		569.72
Repaid TFOTZ loan		400.00
	<u>\$2831.07</u>	<u>\$1575.30</u>
	-1575.30	
	<u>\$1255.77</u>	
Cash on hand 31 March 1976	\$ 20.00	
Accounts receivable		

PUBLICATION OF INTEREST by Mike Dee, Los Angeles Zoo, Los Angeles, CA

Those keepers involved with birds of prey might be interested in a book entitled Raptors of Utah, by Lary Eyre and Don Paul. This publication is available from the Utah Division of Wildlife Resources, 1596 W. North Temple, Salt Lake City, Utah, 84116; for \$3.50 including postage. Raptors of Utah is a softbound book with 76 pages and contains an identification key and list of all raptors found in Utah. The publication includes a short life history, distribution, field marks, and color photos of each species.

KEEPERS AND COMMUNICATION (In House Communications) Part 2
by Judie Steenberg, Topeka Zoo

Communications between co-workers and administrative staff may not always be optimal. It is not reasonable to expect that everybody will always agree with you or understand everything you attempt to communicate. But, if a keeper's attitude is constructive and his effort is rational, much can be accomplished. Keepers have a unique position in a zoo's operation; they have the opportunity to communicate with members of the administrative staff, auxiliary staff (maintenance, volunteers, etc.) and zoo visitors. Although zoo visitors can be difficult to deal with at times, keepers can do much to educate them. Because a keeper can relate first hand information about the animals they can generate sincere interest and appreciation of animals.

Keepers have much to share and accomplish in all levels of zoo communications. How much depends on the individual, and the zoo. Perhaps you are only interested in communicating on a scientific level with your colleagues, but if you choose to, you have the ability to do more for your zoo than you may realize. Whatever your predilection, you have a responsibility, as a keeper, to at least communicate information about the animals in your care to those within your zoo who can aid in their care and management.

One of Topeka Zoo's strongest assets is a good communication system. Keepers at Topeka are kept informed of all that's happening at the zoo and in turn are expected to communicate pertinent information about the animals in their keep to the administrative staff. Morning meetings and weekly staff meetings are held for this purpose. The zoo's Daily Animal Record provides spaces for entries of all data pertaining to animals, physical plant and special activities. Each keeper working a routine is expected to make any entries regarding the animals in his/her area. Each routine also has a notebook that serves as an on-going keeper's record. It contains much of the same information recorded on the Daily Report plus any additional information about the procedures in that area. Printed matter received at the zoo is made available for reading to all interested keepers. The ZOO magazine, published by the Topeka Friends of the Zoo, often contains articles written by keepers. ZOO and the Cowabunga News, published by the Docents, are both distributed to all keepers. Communications at Topeka extend outside the perimeter fence. Not only do most keepers relate well to zoo visitors but many give talks through-out the city to groups of all kinds during zoo and evening hours.

Several Topeka keepers have appeared on local radio and TV public service spots talking about the zoo. Communications are not perfect at Topeka but the opportunities to communicate are there. The rest is up to the individual.

Next month "Getting the Word Out" will give a few pointers on oral and written communications.

References cited:

- Aurner, Robert R. and Wolf, Morris P., 1967. Effective Communications In Business, Southwestern Publishing Co., Cincinnati, Oh.
- Hediger, H. 1964. Wild Animals In Captivity, Dover Publishers Inc., New York, NY.
- Peel, Robert R. 1975. "Keeper Involvements In Zoo Records", The Keeper: Journal of the American Association of Zoo Keepers, Edited by R. Kaufman and C. LaRue, Vol. I, pp. 7-9.

REPTILE & AMPHIBIAN POTPOURRI by Bela Demeter, National Zoological
Park, Washington, D.C.

Welcome to our column. We hope to be able to pass along some useful information on how to keep reptiles and amphibians healthy and breeding. Whether we succeed or not is going to depend a lot on how much response we get from you, the reader. If you have anything to say or suggest, no matter how general or specific, by all means do so. We'd like to cover as wide a field as possible that will be informative to both the experienced herpetologist and the novice. We don't consider ourselves experts in every aspect of this field and this certainly isn't meant to be the last word on reptile husbandry. It will serve as a clearing house for information and observations by all herp people, anonymously if you prefer.

At Lincoln Park Zoo a couple of years ago Eddy Almendarz mentioned to me that he thought his success with reptiles was related to the fact that he sprays his animals down with water once every day. He emphasized that this does not mean keeping the animals in a damp environment; they all have a chance to dry completely in a couple of hours. This seems to make a lot of sense. Dew, after all, is a perfectly natural phenomenon. Many herps will drink water from the plants or other objects in the cage, even themselves. We have been spraying our animals daily for some time now and there is a noticeable improvement in their skin tone and condition. Shedding problems often have been solved by just supplying sufficient humidity. For instance, some of our Tree Boas (*Corallus*) were having difficulty in shedding. When we placed them over water the problem disappeared. For those animals that like more humidity, we place cork bark, plastic plants, or other material in the cage so moisture is retained longer. In view of this it seems that a spray bottle is a valuable piece of equipment to a herp keeper.

A spray bottle could prove to be indispensable to you since it can also be used for catching Geckos. If you're having trouble snatching a speedy Gecko without losing its tail, try spraying it before you reach for it. Since it can't walk very well on a wet surface, the animal will hesitate a fraction of a second longer before darting away. That gives you a little more time to clap your hand over it, decreasing the chance of injury or escape.

ADDRESS ALL MATERIAL TO R.A.P., DIVISION OF REPTILES AND AMPHIBIANS,
NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C. 20009.

OF VETERINARIANS AND KEEPERS by Michael K. Stoskopf, DVM, Overton
Park Zoo & Aquarium, Memphis, Tn.

The word bumblefoot creates an image which will make any good bird keeper cringe. It doesn't do much to make a veterinarian comfortable either! Usually a product of mismanagement, a bumbled foot can take on many forms, and can be caused by many etiologic agents. The problem is most often seen in waterfowl or in birds of prey, although it can happen to any bird.

In waterfowl the usual finding is a soft diffuse swelling in the web between the toes. This may or may not be accompanied by open sores or hard bumps on the bottoms of the toes themselves. A bird may be seen limping or simply not walking at all when first discovered. Unfortunately, by this time the lesions have usually progressed to the point of being very serious. Treatment includes lancing the swellings, being careful not to further damage the foot, and the use of antibiotics topically and injected into the bumbles. No single antibiotic is going to cure every bumble though, because they can be caused by almost every bacteria known. To increase his chances of success with a case then, it behooves the practitioner to know the particular organism he is dealing with. This is why a veterinarian will normally culture the bacteria from a bumble and test its sensitivity against the antibiotic he is using. Possibly then, he may change antibiotics a day or two later.

In birds of prey the problem occurs most frequently in the spring during the moulting season. Inactive birds which do not use their feet enough to keep good circulation are most often affected, and the moulting season is accented by inactivity. Many causes have been cited in the literature including unpadded perches and dirty quarters, and these are certainly contributing factors. However, even the best kept bird can develop bumbles. The trick is to notice the problem as early as possible, to optimize the bird's chances of recovery.

Just as a good reptile keeper checks his charges' eyes each day for signs of ecdysis or moult, the good raptorial bird keeper should check his birds' feet every day. The first sign of a bumble will be discoloration on the plantar or bottom surface of the foot. This will usually be reddish or dark, and may vary in size from only a millimeter in diameter to very large areas of the foot. Soon after discoloration

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occurs, a scab will usually develop. If left to progress large granulomatous bumbles will grow until the foot becomes useless. An old saying by falconers around the world, is that the only way to cure bumblefoot is to release the bird. There seems to be some truth in this if one accepts the many accounts of bumbled birds being freed and recaptured the next year with good feet. Most zoos, and in fact most falconers, however, cannot use this technique at will.

Instead, if caught early, the scabs should be soaked in warm epsom's salt solution for about 30 minutes-after washing the feet with a disinfectant soap. Then the softened scab can be carefully peeled back, avoiding major bleeding. The application of antibiotic salves to the lesion is recommended as well as the observance of scrupulous sanitation procedures. The real treatment for bumbles though, is a good management program which will minimize their occurrence by providing a good diet, clean and appropriate perches, and good exercise.

BALD EAGLES AT THE DETROIT ZOO by Randy McGill

For the first time in 28 years, bald eagles will be exhibited at the Detroit Zoo in the completely renovated Bird House. A 13 pound female was recently delivered to the zoo. She was hatched in the wild at Passamoquoddy, Maine in June, 1966. She was removed from the wild that same year and placed in Federal protective custody at the Patuxent Wildlife Research Center. Lady Eagle, as she is called, laid eggs in 1971, 1972 and 1973, but none were fertile.

The U.S. Fish and Wildlife Service is hoping to capture an odd male in northern Minnesota that is attempting to disrupt a breeding pair. The two will then be housed in a flight cage now under construction at the Bird House. The nest tree, the construction of the nest and the placement of other trees and props has been completed. When the unit is ready, the male will be placed in the enclosure first. After he has become acclimated, the more aggressive female will be introduced.

The object of the project is to successfully raise bald eagles and return them to the wild. Hopefully, if projects such as this are successful, our national emblem will not be an endangered species for our country's tricentennial.

NEW EDUCATION PROGRAM BENEFITS KEEPERS AND ZOO by Steve A. Clevenger

Early last fall a program was developed in the education department of the Oklahoma City Zoo which gives keepers the opportunity for an informal educational experience during the work day. Keepers and administrative staff members have been preparing a 60-90 minute program on various aspects of animal husbandry and management. Guest speakers from local universities and visiting researchers are also invited to present programs. These programs are then presented at a weekly "brown bag" seminar during the lunch hour. For this purpose, the staff has increased the lunch hour an additional 30 minutes on seminar day.

Response to the program has been very good and the sessions held so far have proven to be extremely open-minded. Both keepers and administrative personnel have openly expressed their opinions and some interesting - if sometimes heated - discussions have resulted.

Among the topics which have thus far been discussed are: breeding of cheetahs in captivity, estrus activity and cycling in black and Indian rhinoceros, mortality in new arrivals of selected species, behavior of wild and captive Saki monkeys, captive husbandry and breeding of imprinted psittacines, and breeding crocodilians in captivity.

Not only has this program provided an interesting educational alternative to normal lunch-hour activities, but we feel it has also provided a valuable forum for relaxed and open communications between keepers and administrative personnel.

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UNEXPECTED ORANGUTAN BIRTH AT COMO PARK ZOO by Lee Mary Agness, St. Paul, Mn.

Early on the morning of March 27, 1976 a newborn orangutan was found alive and well in the orang exhibit. The mother orang "Ginger" had shown no signs of pregnancy prior to the birth. The baby orang, "Robin", is the fourth offspring of the zoo's adult male "Yogi" and Ginger.

BUFFALO ZOO CHAPTER NEWS by Richard E. Grudzien

On March 13, 1976 the Buffalo Zoo chapter of AAZK held its annual officer election. The results of our election are: Karen Gridstas, President; Richard Grudzien, Sec./Treas.; Jeff Perry, Program Chairman. We wish our new officers good luck!

For approximately the last six months our chapter has been trying to establish a keeper exchange program and it seems we have succeeded. Within the next few months the plans should be finalized to start an exchange program with the Metro Toronto Zoo. We feel that a keeper exchange program will benefit both zoos and be a good learning program for our keepers. The exchange keeper will be able to observe different zoo operations and keeping methods. During his stay at the zoo, the person will be able to address the AAZK and exchange ideas and methods of animal keeping.

We hope other chapters will think about forming keeper exchange programs as it will benefit their zoo and keepers.

ANIMAL DEALER ORDERED TO STOP VIOLATING ANIMAL WELFARE RULES USDA

A Norco, California dealer in zoo animals has been ordered by a federal administrative law judge to "cease and desist" from violations of the Animal Welfare Act with which he had been charged by the U.S. Department of Agriculture.

William Hampton had asked for a hearing with the judge following a 10 count charge issued in June, 1974. At the hearing, held Feb. 11, the Animal and Plant Health Inspection Service of the USDA agreed to drop three counts in its charge. The allegations involved the shipment of a Bengal tiger.

The order, which has the effect of a permanent injunction, forbids Mr. Hampton from operating as a dealer without a USDA license; using substandard animal shipping cages; neglecting proper storage of feed and bedding; leaving monkeys outdoors without shelter; using substandard monkey cages at the premises; allowing his premises to become dirty and fall into disrepair; and letting manure accumulate to the extent that it becomes a hazard. Maximum penalties for violating the order are \$500.00 per day for each violation.

ZOOKEEPING.....A PROFESSIONAL CAREER? by Ed Roberts, Walter D. Stone
Memorial Zoo, Boston, Ma.

Recently I was asked to represent the zoo profession at our local senior high school as part of their "Horizons Unlimited" career day. There were some 30 businesses represented, running the gamut from the military to radio broadcasting.

I got my share of questioning about the zoo profession! Most of them were interested in the veterinary aspect, but those who did ask me about zookeeping seemed genuinely interested in this type of work. All of them wanted to know if they needed a college education in zoology to work with animals. This is how I put it to them. "It's great to be able to get that little sheepskin with a degree in any of the animal sciences, but that alone should not be a requirement for the keeper profession. Seven-tenths of the job can be learned on the job. The more eager you are to learn, to research where your particular animals come from, to learn their nutritional and dietary needs, and to learn maintenance is critical to them, the better keeper you will make.

How you go about under the direction of a good keeper taking care of, handling, cleaning and observing these animals is also very important. Another important thing is motivation and temperament for the one who enters this field. Generally we find that those who have worked on farms and are tuned in to the heavy labor and are used to working around farm animals, usually make good zoo people. They trust all the animals and rarely have any favorites, treating them all more or less alike. Many others think that the zoo profession is all glitter and romance like they sometimes see on T.V. This is far from the truth. In essence, zookeeping is more or less, if you will allow me the use of the word, janitorial. Since cleanliness is a greater part of the job and because you want your exhibits you work in to look presentable to the public it is a matter of pride. It also shows your superiors that you are taking a keen interest in your work and in the welfare of the animals. You find out that animals live longer because there is less chance of infection in a clean area. After a while, you can start sensing, even by smell, that something is not right with the animal. It all takes time, patience, understanding and fortitude. As you progress you become more knowledgeable. For reference material you can always go to the library. It is an excellent source of infor-

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mation on wild animals. Other keepers and the AKF are good sources of reference on captive animals. Check The Merck Veterinary Manual for animal illnesses. Your Head Keeper, Curators and Director are and should always be ready to answer any questions you may throw at them. That's how they learned and that's how you can learn. The Management of Wild Mammals In Captivity by Lee S. Crandall, is a must for all zoo people. National Geographic has excellent documentaries within its pages which can clue you in on many animals.

So you want to be a keeper? I'll tell you something. You'll never get rich on this kind of a job. But the riches and rewards you do get are bountiful. You sweat over a sick animal you have been taking care of and with your help it regains it's health. You can never explain in words the satisfaction you get and you can't measure it in terms of money.

You talk to groups of people about certain animals, even one species that you have decided to specialize in and you watch the reaction of the people to your words. There is your reward as you see these people hang on to every word you're saying. They know that you know. Don't let anyone tell you this job isn't worth it!

In spite of all that people say about the smells, the dangers, the pay, the arguments, the gripes, the holiday and week-end work schedules and the unappreciative public, zookeeping is a tremendously rewarding and exciting experience."

PAST ISSUES OF AKF AVAILABLE FOR MEMBERSHIP RECRUITMENT

RECENTLY THE LINCOLN PARK AAZK CHAPTER REQUESTED A SUPPLY OF EXTRA COPIES OF PAST ISSUES (ASSORTED MONTHS) OF AKF TO USE IN RECRUITING NEW MEMBERS. THERE IS STILL A LIMITED SUPPLY OF OLD AKFS AVAILABLE FOR THIS PURPOSE. IF YOUR CHAPTER IS INTERESTED IN OBTAINING 20 - 25 COPIES, OR IF YOU ARE ORGANIZING A CHAPTER, SEND YOUR REQUEST TO AKF, 635 GAGE BLVD., TOPEKA, KS. 66606. ATTN: JUDIE STEENBERG. REMEMBER THERE IS A LIMITED SUPPLY - DON'T DELAY, WRITE NOW!

AAZK '76 Conference

WILL BE HELD IN SAN DIEGO, CALIFORNIA FROM AUGUST 23 - 27. CONFERENCE HEADQUARTERS WILL BE THE SHERATON AIRPORT INN ON SHEL HARBOR ISLAND IN DOWNTOWN SAN DIEGO. THE REGISTRATION OF \$30.00 PER PERSON WILL INCLUDE BANQUET, COCKTAIL RECEPTION, LUNCHEONS, ETC..

THE ROOM RATES ARE AS FOLLOWS: SINGLES - \$21.00, TWIN OR DOUBLE - \$26.00, SUITES - \$75.00 (THE RATES DO NOT INCLUDE ROOM TAX).

MIKE DEE AND STEVE TAYLOR WILL BE HANDLING THE CONFERENCE PROGRAM. MATERIAL FOR THE PROGRAM SHOULD BE SENT TO MIKE AT 1141 WESTERN AVE., GLENDALE, CA 91201.

THOSE WISHING TO PRESENT PAPERS, SLIDES OR FILMS SHOULD SEND INFORMATION ON THE TITLE, SUBJECT OF MATERIAL AND EQUIPMENT REQUIRED AS SOON AS POSSIBLE TO MIKE.

ART AUCTION AT SAN DIEGO

At this time we are anticipating holding an art auction following the banquet at San Diego. These auctions have been highly successful in the past, and we expect nothing less this year. Save all your objects d'art, make a few, buy a few. And bring 'em to the Art Auction at San Diego!

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ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

VOLUME III NUMBER 6

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ANIMAL KEEPERS' FORUM

EDITED BY RON KAUFMAN AND CHRIS LARUE

TOPEKA ZOOLOGICAL PARK 635 GAGE BOULEVARD TOPEKA, KANSAS 66606

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DEADLINE FOR THE JULY ISSUE IS 20 JUNE

OVERTON PARK ZOO ANIMAL KEEPER ATTACKED Memphis, Tenn.

Debbie Blackwell remains in critical condition in a Memphis hospital after being kicked by a female giraffe on 5 May 1976.

Miss Blackwell, 27, had entered the giraffe enclosure in an attempt to free a 5 month old baby giraffe that had become caught in a barrier. The baby died of suffocation before it could be freed. According to witnesses, Miss Blackwell might have saved the youngster had not the mother intervened, and kicked her to the ground. Miss Blackwell then got up but the giraffe kicked her to the ground again and apparently stepped on her head. Miss Blackwell is in a coma with an injury described as a brain stem bruise. Her condition appears stable, however. The staff of Animal Keepers' Forum extend its wishes to Debbie's family, friends, and co-workers for her smooth and swift recovery.

FEEDING BANDED KRAITS by Art Moore, Baltimore Zoo, Baltimore, Md.

On July 1, 1974 two banded kraits (Bungarus fasciatus) were hatched at the Baltimore Zoo's Reptile House. They are doing well, but feed on nothing but small snakes. Members of our staff collect ring-neck and northern brown snakes and these are frozen until ready to be fed to the kraits. At feeding time, the small snakes are thawed and a 50 mg. capsule of Bionate (a dietary supplement) is inserted into the mouth of each. The kraits accept these readily.

At times, mainly during the winter, our supply of small food-snakes has dwindled. However, we always have a good supply of large frozen rat snakes, which are used as food for our king cobra. We have found that the kraits will accept four or five inch sections cut from the tails of these larger snakes. For added nutriment, a dead 10-12 day old mouse is sewn to the end of each severed tail with ordinary cotton thread. In this way we have been able to keep our young kraits well-fed during shortages of small food-snakes.

ANIMAL NUTRITION by Dr. Richard S. Patton, Director of Professional Education, Mark Morris & Associates, Topeka, Ks.

Question: What is all the concern about thiamin levels in animals fed fish?

Answer: Certain fish contain an antithiamin factor. In the active form it cleaves the thiamin molecule and leaves the food it is in devoid of thiamin (vitamin B₁). This has come to light only recently in the science of nutrition and was precipitated largely by problems in the mink ranching industry in the '50s. Mink fed fish that contained thiaminase, or in extreme cases even nonthiaminase fish that have been consuming thiaminase-active fish, develop a disease called Chastek paralysis and show the nondescript signs of anorexia, weakness, incoordination, paralysis and ultimately death. Animals showing these signs respond dramatically to parenteral administration, sometimes recovering 100% in an hour or less.

Mild cooking (2 min. at 93° C or 5 min. at 82° C) destroys the thiaminase and makes fish safe to feed. However, the situation is usually circumvented by providing supplemental thiamin. To put thiamin capsules into the fish is not the best approach. The supplemental vitamin should be fed as far away in time as possible from the time of fish feeding. Remember that most creatures need thiamin in the diet on the order of parts per million and to slug them daily with a couple of grams is wasteful and possibly harmful.

A very well referenced list of thiaminase containing fish is contained in the NRC booklet on the Nutritional Requirements of Mink and Foxes. Some of the more common thiaminase positive fish are anchovies, white bass, butterfish, carp, catfish, herring (Baltic and Atlantic), mackerel (Pacific), menhaden, shad, smelt and suckers.

The following species do not contain thiaminase: bass (large and small mouth and rock), bluegill, chub, cod, haddock, hake, herring (Lake Superior), mackerel (Atlantic), perch, pike, smelt (pond), squid, trout (brown, lake, rainbow) and walleye.

The exacting molecular characteristics of the carp antithiamin are described in the literature and can be obtained by those interested.

Regardless of the animal, if its major dietary component is fish that contain thiaminase, the use of supplemental thiamin would be indicated. As a guide, 20 micrograms, or .02 mg., are needed, per kilogram of body weight. This would mean, for example, that a 1,000 lb. polar bear needs 9 mg. total. Because it would not be evenly distributed throughout the food, absorption may be impaired and to increase the dosage 10% would not be harmful.

BREEDERS OF ENDANGERED SPECIES TO BE HELPED BY PROPOSED REGULATIONS

Zoos breeding endangered species will be helped by new regulations proposed by the U.S. Fish and Wildlife Service. The regulations, proposed recently in the Federal Register, simplify the process of transferring ownership of certain endangered species which are being bred in captivity. Interested persons have until July 6, 1976, to comment on the proposal.

The proposed regulations would determine that "Captive, Self-Sustaining Populations" of the following endangered species have been attained in the United States: tiger, leopard, jaguar, ring-tailed lemur, black lemur, brown-eared pheasant, Edward's pheasant, Humes pheasant (bar-tailed pheasant), Mikado pheasant, Palawan peacock pheasant, Swinhoe pheasant, white-eared pheasant, Nene goose, Hawaiian duck, Laysan teal, masked Bobwhite quail. The regulations would set up a greatly simplified system of permitting qualified persons to buy or sell these species for purposes that would not result in the import, export, or death of the animal or the loss of its reproductive ability. The regulations also provide for a recordkeeping system sufficient to enable the Service to monitor the well-being of the captive populations.

The Service considered data provided largely by the American Game Bird Breeders Cooperative Federation and the International Species Inventory System of the American Association of Zoological Parks and Aquariums in making these proposals.

REPTILE & AMPHIBIAN POTPOURRI by Trooper Walsh, National Zoological Park, Washington, D.C.

At the N.Z.P. Reptile Division, we are experimenting with photo-period, temperature and humidity variables in an effort to reproduce selected reptile species.

In the last installment, Bela Demeter pointed out how spraying some reptiles can be helpful to them. In addition to spraying animals, there are other ways to create greater humidity and warmer temperatures. In our crocodile exhibit we use timed misters, skylights (for photoperiod), hot air blowers and subsurface heating systems to effectively duplicate the climate condition of a tropical rainforest. Working in these areas for any length of time is exhausting to us, but the crocodiles apparently appreciate it.

Our Emerald tree boas (*Corallus canina*) are misted twice daily. The top of their breeding cage which has a movable polyethelene cover (humidity shield) is kept covered during the day and is opened at night. A heat tape on a timer goes on at about the same time the shield is put in place following the morning misting. The average daytime temperature is 86 degrees and the misting produces condensation on the glass. The Emeralds appear content in this hot, humid environment.

In the evenings the shield is lifted, the heat system clicks off, and the animals are misted a second time. From then until the early morning hours, the Emeralds are most active and alert. The faster the temperature and humidity drop, the more active they become. The average night temperature is 75 degrees. The evening cycle also gives the specimens and cage a chance to air out and dry off.

In my private collection I have noticed six different Green tree pythons (*Chondropython viridis*) drinking water from their own backs just after the morning misting. Their dorsal scales collect the mist into large beads of water. The front of a tree python's face is flat and angled so that hardly any liquid is lost when the lips touch the droplets. I have seen these snakes go up and down their own backs drinking as though they were eating corn on the cob. Although these specimens also drink from water bowls, they obtain most of their liquids this way.

I have found that this temperature and humidity control system may be beneficial in many ways. Emerald tree boas and Green tree pythons, for instance, can be problem feeders and generally will not defecate regularly or shed properly. With this climate control system I have had great success solving all three problems. Ninety percent of the defecations occur soon after the evening misting when the heat and light systems shut off, and the shield is opened. I have found that the tree pythons are most inclined to search for and take food immediately after defecation.

This year, I've been breeding Garden tree boas (*Boa hortulana*) using similar climate controls as those used for my tree pythons. I have observed my number one male copulating with three different females, usually soon after the evening misting and cooling processes have begun.

Species from different climatic regimes require varying amounts of temperature, humidity and photoperiod to stimulate and fulfill their annual cycles. It is important to recreate these same conditions for captive specimens in confined quarters. Too much humidity per daily cycle is not good...skin and bacterial problems often result. That is why it is necessary to have a set time each day when the cage and and its inhabitants can dry off.

These have been just a few ideas I have used with my animals at home and at the N.Z.P. I'm sure some of you have ideas and comments of your own. Please write to us with your thoughts and opinions.

AAZK CHAPTER INVENTORY

Dennis Grimm of the Brookfield Zoo and Coordinator for Chapter Affairs is compiling an inventory of all the AAZK chapters in the nation. He needs to have the information before the conference in San Diego. He asks the presidents of each chapter to submit the following information to him at the Brookfield Zoo, Brookfield, IL 60513: total membership; approximate active members; present officers in the chapter; function of chapter, including... meetings, past, present and future projects; insight on the chapter's future involvement in national AAZK affairs; degree of cooperation with host zoo.

OF BANGKOK, BAZAARS and BANTENGs by Tom Goldsberry, Portland Zoo,
Portland, Or.

Saturday afternoon. The scene is Phadrane Ground, one of Bangkok's largest and most popular market-bazaars. Since early morning people have walked, driven and hitched rides to reach the market for a week-end of buying, selling and trading.

In an open space near the food vendors, children play tag with cobras while parents watch unconcerned. These kids are not snake charmers. The snakes are not de-fanged. To them it is merely a game; grab the hissing snake and throw it at a friend.

The noise of the kids vs. the snakes is soon lost as you drift further into the bazaar. Produce from nearby farms is abundant as are many varieties of flowers, which the Thais are passionately fond of. Then there are the animals. Puppies, kittens, silky chickens, bantams, and, above all, birds.

Perhaps 1000 or more birds may be seen on any given bazaar day at Phadrane Ground. Barbets, grackles, woodpeckers, parakets, lorries and many more species are piled in cages six high like crates of apples. It's enough to make any bird curator or keeper's mouth water.

Just for the hell of it, I asked one of the bird vendors who spoke good English, if he had any tigers. With a lascivious grin that used to be associated only with Parisian post-card sellers he replied, "If you want them." That sent a chill down my spine! According to Mountfort (1973), the estimated population of the Chinese tiger, Panthera tigris corbetti, was 600, and most of these are confined to Malaysia. I could imagine some "agent" going off into the bush, blissfully blasting the head off a tigress, bringing the cubs back and putting them up for sale like furry Hershey bars.

After that little episode it was a welcome change to visit the Snake Farm at the Queen Saovabha Memorial Institute, operated by the Science Division of the Red Cross of Thailand. This was the second snake farm established in the world and was officially opened November 22, 1923. The main function of the Institute is the manufacture of vaccine and serums.

Thailand, being a tropical country, abounds with snakes of great varieties, poisonous as well as harmless. Each year a large number of casualties are caused by venomous snakebite. Venomous snakes are brought in alive by snakecatchers who are farmers by profession, and they are purchased at prices varying with size and species.

Posisonous snakes found in Thailand are the cobra, Naja naja; king cobra, Naja hannah; banded krait, Bungarus fasciatus; Russel's viper, Vipera russeli; a few species of pit vipers and some species of sea snakes. Venom extraction is demonstrated to the public at regularly scheduled hours.

No visit to Thailand for anyone in the zoo business is complete without a visit to the Dusit Zoological Park, the national zoo of Thailand. Located on the fringes of Bangkok, the Dusit Zoo occupies about forty acres of land that once belonged to the royal family.

The zoo now boasts a fine collection of Asian cattle, including the banteng, Bos banteng; gayal, Bos frontalis birmanicus; serow, Capricornis sumatraensis; eleven species of felines; lesser mouse deer, Tragulus jvanicus; Malayan wild dog, Cuon alpinus; and the larger bamboo rat, Rhigomys sumatraensis. There are over 1000 species in all.

A lagoon, where visitors may feed the huge carp swimming there; a "Happyland" children's zoo, complete with playground and concession stands; a spacious aviary, and an admission fee of twenty and ten cents for adults and children respectively, make the Dusit Zoo a bargain in any language.

I spent two pleasant afternoons with the director, Professor Duan Bunnag. He is a former Utah State student, who taught agriculture in northeast Thailand before accepting the position of zoo director two years ago.

As we sat in his marble-tiled office, with a Buddhist shring in one corner, and sipped iced tea, Mr. Bunnag reiterated the problems of zoos everywhere-- maintenance, rock throwers and money. The Dusit Zoo receives no municipal support but is supported entirely by admission fees. Naturally this places a heavy burden on a zoo located in a country with an average annual rainfall of more than eighty-five inch-

es, and the zoo may go for days without a paying customer. Professor Bunnag takes all of this in stride and says he will, "Make a better zoo so people will come even when it is raining." His future plans include a calliope and a merry-go-round for the children's zoo, more African exhibits, and a general renovation of the zoo.

There are 130 people employed at the zoo, about one-half of whom are keepers. Keepers begin at the usual low wage and twenty steps later they finally attain the top wage. This process usually takes twelve to fifteen years depending on the keeper's ability. All health benefits are provided for the keeper and his family, including his mother and father from the day he begins. School fees for children up to age twenty are paid for by the zoo.

Senior staff personnel include three veterinarians, two veterinarians with certificates (veterinarian technicians), two persons with agriculture certificates, two with architectural certificates, and four people with degrees in finance.

Outside of the administration building stands a bronze statue of a Schomburgk deer, a species once common in Thailand, but extinct for thirty years. I saw a dozen huge racks of this magnificent animal and wondered of what a sight they must have been back in 1864 when Anna Leonowens, the peripatetic English school teacher, took on the job of educating the king's children. The royal palace is still there; the temples are timeless; but the once numerous canals are slowly being reclaimed as population and motor traffic increase; and, of course, the deer are gone. Anna wouldn't know the old town now.

27 PRIMATES TO BE LISTED AS ENDANGERED OR THREATENED USDI

About 35 percent of the world's monkey species are in deep trouble, according to a recent survey of the 150 living primate species by the USDI's U.S. Fish and Wildlife Service. The study resulted in a proposal to list an additional 27 primates as either endangered or threatened. That would raise to 55 the total number of primates listed by the U.S.

Ten of the species occur in Asia, eleven come from Africa and Latin America hosts six. Military activities, habitat destruction, biomedical research, the pet trade and the use of some primates as food for man are given as the principle reasons for their decline.

<u>SPECIES</u>	<u>STATUS PROPOSED</u>
Francois' leaf monkey	endangered
Lesser slow loris	threatened
Tonkin snub-nosed monkey	"
Stumptail macaque	"
Philippine tarsier	"
Formosan rock macaque	"
Japanese macaque	"
Toque macaque	"
Purple-faced langur	"
Long-tailed langur	"
Diana monkey	endangered
Red-eared spot-nosed monkey	"
Red-bellied monkey	"
L'hoest's monkey	"
White-collared mangabey	"
Black colobus	"
Mandrill	"
Drill	"
Gelada baboon	threatened
Chimpanzee	"
Pygmy chimpanzee	"
Cotton-top Marmoset	endangered
Pied tamarin	"
Yellow-tailed wooly monkey	"
White-footed tamarin	threatened
Lazy howler monkey	"
Squirrel monkey	"

"HUSBANDRY AND PROPAGATION OF CAPTIVE REPTILES" is a symposium to be held on 24 July, 1976 at Hood College, Frederick, Maryland. It is a one day symposium starting at 8:00 a.m. and running to 6:00 p.m. The program material is primarily aimed at zoo keepers and private collectors. Registration fee is \$25.00 and includes lunch and two coffee breaks. Pre-registration forms may be obtained by writing or phoning: Director, Catoctin Mountain Zoo, Rt. 3, Box 126, Thurmont, Maryland 21788. Phone (301) 271-7488.

KEEPERS AND COMMUNICATION - Part III Getting The Word Out by Judie
Steenber, Topeka Zoo

Are you communicating your ideas, information and the knowledge you have acquired to others? If not, why not? You have something to say; don't be stopped because you think you can't give a talk to a group or put your ideas down on paper. If you have any desire at all to communicate in these ways, you can learn to. The key to oral and written communication is YOU. If you want to, you can do it. Others already have simply because they had something they wanted to communicate.

Probably the most difficult means of communication is public speaking, and yet, it can be most effective. A few years ago a Speakers' Bureau I belonged to had the good fortune to have the Director of a local theater speak to them on "How to Speak to an Audience". Following are his ideas on public speaking.

A survey of more than 20,000 business men taking a speech course indicated three general problems: 1. stage fright, 2. how to organize their thoughts, and 3. how to speak clearly and convincingly.

Stage fright is almost universal with speakers. For some it is minor and with others monumental. But, in any case, it cannot be avoided. it is a reality and must be controlled, not eliminated. It is analogous to an athlete "being up" for an important game. Stage fright is a natural reaction to a situation. Your metabolic rate increases because you have an added need for alertness and strength. Take advantage of it, use the added energy to get into the game so to speak... The anxiety begins to leave as you begin to speak. You can learn to control the physical and mental manifestations of stage fright. Physically, use that energy to take a firm hold of a chair, podium or table; push your feet into the floor; clasp your hands tightly behind your back - don't be afraid of it... use it! Does your throat get tight?... hum a bit. Do you feel like you can't breath?... hold your breath for 30 seconds, it's guaranteed you'll have no trouble taking a breath. These aren't tricks but simple basics... and they work. To deal with the mental aspect of stage fright... remember, you have something to say... you don't have to give that talk but you have an idea or information you want to share, and THAT is what is important. Get up there and establish eye contact with your

audience before you start to speak. It reminds them that you are sincere and have something to say.

Organizing your thoughts in preparing your speech is an important step. Know your material, study it, be sure of yourself! Ask yourself these questions and answer them in writing.

1. What is my viewpoint? (general purpose for speaking).
2. What do I want to accomplish, what are my objectives.
3. Who is my audience? (must be asked every time the speech is given, no two audiences are alike.)
4. What brings them together, what is their common interest?
5. What knowledge do they have of my subject? (what have they read, heard or experienced).
6. What is their attitude?
7. What can I expect from the audience? (there will be different expectations with different audiences). Analyze each audience on the number, age, education and experience.

Use the interest of your audience as the base to build your speech on and make it interesting to them. Get them on the first few sentences by appealing to their interest, revealing the importance of the subject or by creating suspense. Avoid jokes unless they relate to the subject. The human mind remembers best what it perceives at the beginning and the end of a message rather than in the middle. Use the middle to reinforce. Your closing lines should tie in to the opening sentence if possible.

Having a clear and convincing delivery will add to the impact of your speech. Good speakers are not those with good voices (golden tones) but those who have an interesting delivery, sound natural and are easy to understand. Pause before and after important ideas and change tempo; increase the speed of delivery when excited or covering information easily understood, decrease when making a definite point. Change your volume to emphasize ideas but also use contrast - a whisper can have tremendous effect and prevents monotony. Underscore important words with a pause, volume or pitch.

There are several common problems that speakers come up against but they all have solutions. (con't next page)

- When using slides, if at all possible work from the front of the room. Even without eye contact you can relate to the audience better. Lead into the slides, explain what they intend to cover before beginning.
- Lapse of memory - recognize it, deal with it and go on to the next point.
- Time limit - cover fewer points well.
- Paranoia of peer group - be prepared, know your material well and get rid of the feeling. YOU have been asked to speak. Acknowledge that there are others present who also know about your subject but you are there to give your ideas.
- Children's attention span - talk to them as people - don't be phony, watch your vocabulary.
- Combination audiences - children and adults. Go with your primary purpose, if necessary acknowledge the children's impatience and go on.
- Written speech - will give you confidence in having prepared it but leave it at home.
- Don't know an answer? - admit it, then offer to find out. It will give added authority to your other answers.
- A quaver in your voice? - So what! - what you have to say is more important - be enthusiastic.
- Signals you are losing an audience are noise, restlessness, sleeping. Wrap it up.
- Inquiry method - ok to use, in fact for some audiences it is more effective, but takes longer. Be sure to have the answers and be able to redirect questioning.

Be careful to follow the "don'ts" when giving a talk, such as: do not try to give all data to everyone and over communicate, don't shift contexts, mingle ideas and confuse your audience, don't mumble or gesture to the distraction of your audience, do not laugh to conceal your lack of information or wander through your dissertation in a disorganized manner.

Most importantly be prepared! Determine your purpose, analyze your audience, evaluate the situation, organize your material and then go to it with a clear, convincing delivery and enthusiasm. You have something important to say.

AAZK '76 Conference

WILL BE HELD IN SAN DIEGO, CALIFORNIA FROM AUGUST 23 - 27. CONFERENCE HEADQUARTERS WILL BE THE SHERATON AIRPORT INN ON SHEL HARBOR ISLAND IN DOWNTOWN SAN DIEGO. THE REGISTRATION OF \$30.00 PER PERSON WILL INCLUDE BANQUET, COCKTAIL RECEPTION, LUNCHEONS, ETC..

THE ROOM RATES ARE AS FOLLOWS: SINGLES - \$21.00, TWIN OR DOUBLE - \$26.00, SUITES - \$75.00 (THE RATES DO NOT INCLUDE ROOM TAX).

MIKE DEE AND STEVE TAYLOR WILL BE HANDLING THE CONFERENCE PROGRAM. MATERIAL FOR THE PROGRAM SHOULD BE SENT TO MIKE AT 1141 WESTERN AVE., GLENDALE, CA 91201.

THOSE WISHING TO PRESENT PAPERS, SLIDES OR FILMS SHOULD SEND INFORMATION ON THE TITLE, SUBJECT OF MATERIAL AND EQUIPMENT REQUIRED AS SOON AS POSSIBLE TO MIKE.

THINGS TO REMEMBER

- * There will be a post-conference tour of the Los Angeles Zoo hosted by Mike Dee, on Friday August 27, 1976.
- * If you have a paper or film for the conference please notify Mike as soon as possible to allow time for preparation of a conference program.
- * Don't forget to send articles for the AAZK journal to the AKF editors. Deadline for THE KEEPER Vol. II, 1976 is 1 September 1976.

AAZK MEMBERSHIP INFORMATION

AFFILIATE (KEEPERS), ASSOCIATE, AND FOREIGN DUES.....	\$10.00 ANNUALLY
STUDENT DUES.....	\$ 5.00 ANNUALLY
CONTRIBUTING MEMBER DUES.....	\$25.00 ANNUALLY
SUPPORTING LIFE MEMBER.....	\$200.00

MAKE CHECKS PAYABLE TO: AMERICAN ASSOCIATION OF ZOO KEEPERS.

AAZK MEMBERSHIP INCLUDES SUBSCRIPTION TO THE MONTHLY NEWSLETTER, ANIMAL KEEPERS' FORUM AND THE ANNUAL PUBLICATION, THE KEEPER: JOURNAL OF THE AMERICAN ASSOCIATION OF ZOO KEEPERS. ALL MEMBERS RECEIVE AN AAZK SHOULDER PATCH AND A MEMBERSHIP CARD GOOD FOR FREE ADMISSION TO MANY ZOOS AND AQUARIUMS IN THE U.S. AND CANADA.

SEND NAME AND ADDRESS AND CHECK OR MONEY ORDER TO: AAZK, 635 GAGE BLVD., TOPEKA, KS. 66606.

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AMERICAN ASSOCIATION OF ZOO KEEPERS

ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

VOLUME III NUMBER 7

JULY 1976



ANIMAL KEEPERS' FORUM

EDITED BY RON KAUFMAN AND CHRIS LARUE

TOPEKA ZOOLOGICAL PARK 635 GAGE BOULEVARD TOPEKA, KANSAS 66606

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DEADLINE FOR THE AUGUST ISSUE IS 20 JULY

159 MORE ANIMALS LISTED AS ENDANGERED USDI News Release June 14, 1976

The Asian elephant, harpy eagle, Przewalskis horse and all Hylobates gibbons are among 159 animals that have been added to the U.S. endangered species list by the USDI's U.S. Fish and Wildlife Service. The endangered list now includes 585 animals. The rulemaking and a complete list of species was published in the June 14, 1976, Federal Register.

Sixty-one mammals, 38 birds, 2 fish, 24 mollusks, 28 reptiles and 6 amphibians are included in the list, representing every continent.

As with other "endangered" species, the major impact of this action will be on those persons who deal in interstate commerce with the species (or their parts or products). The list includes many animals found in zoos, including crocodilians, pythons, various psittacines, numerous primates, spotted cats and large mammals. For more details consult the June 14, 1976, Federal Register.

THE WORLD'S OLDEST CAPUCHIN IS DEAD by Harold G. Crooks, Mesker Park Zoo, Evansville, In.

Jerry, the world's oldest white-faced capuchin monkey in captivity is dead. He died on April 12, 1976, at the age of 47 years, 11 months. A necropsy revealed that gonadal and lymphatic cancer was the cause of death.

Jerry came to Mesker Park Zoo in May 1929, when he was approximately one year old. He was purchased from the late Mr. Clem Kevekordes, a keeper at Mesker Park at that time.

Jerry was on exhibit at the zoo from 1929 until 1964. Due to his advancing age, it was decided he would be better off in a quieter area behind the scenes at the zoo. After his death, Jerry's body was sent to Penrose Laboratory for their studies on longevity.

Although Jerry was twice the normal age for members of his species, his longevity record is already being challenged by Bobo, another white-faced capuchin at Mesker Park Zoo. Bobo is 41 years old now and going strong.

EXECUTIVE SECRETARY RESIGNS

Rick Steenberg, Executive Secretary for the American Association of Zoo Keepers since 1 January, 1975 has announced his resignation from that post. His resignation was to take effect immediately. Through Steenberg's financial and organizational expertise, AAZK has become a viable force in the zoo field. His efforts have been tremendous and warmly appreciated by all who have been involved with AAZK. The AKF staff joins the AAZK Board of Directors in extending heartfelt thanks to Rick.

Chris LaRue, vice-president, will temporarily assume Rick's duties until a permanent successor can be named.

SPEAKER PROGRAM WORKSHOP AT SAN DIEGO CONVENTION

We would like all chapters that have a speaker program to bring to the convention all relevant materials. This should include program request forms, cover letters, profile sheets, evaluation forms, lists of topics, etc. Bring several copies of each for distribution among participants. If you have slide lectures on general topics such as endangered species, etc., bring the outline along also (not the actual slides).

This workshop will be aimed at improving the quality of existing speaker programs by exchanging ideas from different programs. We will also explore the possibilities of organizing a national speaker program that could be presented to new or existing chapters in a package form. The package would include sample forms as well as suggestions for implementing a speaker program to meet local needs. AAZK could also have copies made of selected slide lectures that would be offered to those chapters wishing them, at a reasonable cost.

* AKF & AAZK T-shirts are no longer available from the Sedgewick *
* County Zoo. We hope to make these T-shirts available from a new *
* location as soon as possible. *

THE ZOO IN THE CLOUDS by Tom Goldsberry, Portland Zoo, Portland, Or.

Situated almost at the top of 1300 foot Victoria Peak, offering a commanding view of the world's fourth largest harbor and the South China coast beyond, lies the Hong Kong Botanical and Zoological Gardens. Set in an English garden atmosphere, the Hong Kong Zoo provides a pleasant respite from the noise and clamor for the city's 4,000,000 inhabitants.

This small (17 acres) but viable zoo is a prime example of a zoo that, although it does not adhere to the "Zip"!, "Bang"!, "Wowie"! formula found in many present day zoos, still manages to accomplish the difficult twin tasks of conservation and recreation. It has no children's zoo.

In 1975 the Hong Kong Zoo underwent major capital improvements with the result being that all mammals are now housed in outdoor enclosures that allows adequate public viewing, but also ensures the animal's privacy. The new 2,000 square meter, open-topped enclosure for flamingos is a delight to observe; and under the innovative and energetic leadership of Mr. John Romer, Curator of Mammals, the zoo has a breeding group of Ring-tailed lemurs, Lemur catta; and, possibly for the first time in a tropical zoo, a pair of young North American Cougars, Puma concolor. Other mammals exhibited include the Chinese porcupine, Hystrixt hodgsoni; Cotton-top tamarins, Saquinus oedipus; and Celebes Black apes, Macaca nigra.

The bird collection now numbers more than 700 specimens, representing about 300 species, including both local and exotic birds from most parts of the world. The HKZ is especially proud of its record in breeding the rare Palawan peacock, Polyplectron emphanum. For the past ten years, Mr. K. Searle, Curator of Birds and the HKZ have supplied zoos all over the world with this outstanding species. Also high on the list of breeding successes is the Argus pheasant, Argusianus argus grayi. Other resident birds species of interest are the Equatorial-cock-of-the-rock, Rupicola peruviana aequatorialis;

Rothschild's Mynah, Leucospar rothschildi; Chinese pond heron, Ardeola bacchus; Himalayan Brey Peacock Pheasant, Polyplectron bicalcaratum bakeri; and the Chinese Babax, Babax lanceolatus.

As is usually the case, much of the credit for the zoo's successful breeding record must go to a keeper. In this case it is Mr. Iu Muk, a highly dedicated keeper who, although he has worked for seventeen years in somewhat cramped and crowded conditions, still manages a wide grin and a touch of pride while speaking of his birds in his broken English. Assisting him for many of his seventeen years at the zoo is his wife, who is classed as a laborer.

Incidentally, all bird signs are neatly painted in color on 4"x6" cards, encased in heavy durable plastic, and identified in English, Latin and Chinese.

The keeper force consists of two senior charemen (senior keepers) one each for birds and mammals; five laborers (keepers) under direct charge of the two senior charemen; and a Amenities Assistant, Class III, who runs the zoo on a day-to-day basis. "Keepers" in Hong Kong parlance are security guards, who are uniformed and have nothing to do with the animals--sort of people keepers.

The Hong Kong Botanical and Zoological Gardens is a facility provided by the Urban Council and admission is free.

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ZOO KEEPER MAULED BY BEAR

A summer employe at the Washington Park Zoo in Michigan City, Ind. suffered injuries to his left arm and severed tendons in his left leg after being attacked by a Japanese black bear. Brain Bendix, 16, was reported in fair condition after emergency surgery at a hospital.

The keeper had started to turn off the water hose after cleaning the bear's exhibit. The valve is located between the front of the bear's barred enclosure and the guard rail. The bear grabbed Bendix by the left leg and pulled him against the bars.

REPTILE & AMPHIBIAN POTPOURRI Reptile Incubation by Sam Davis,
National Zoo, Washington, D.C.

Incubation is one of the most important aspects of a reptile house. In the not too distant future it may be a very important link in sustaining a healthy reptile collection. I would like to share some of our incubation methods that have been successful.

Many incubation methods have been tried at the NZP from plastic bags and paper towels to an aquarium with sand. We now have hit upon a method with which our success is rapidly improving. We use ten gallon aquariums with sliding glass tops that insure maximum moisture retention and are easy to clean. Two heat tapes placed lengthwise under each aquarium are the heat source. Slate-bottomed aquariums seem to be best for retaining heat. About 1½" of pea gravel are spread on the aquarium bottom allowing less direct contact with the heat source and more surface area for water retention. Distilled water is sprayed into the aquarium when the pea gravel and the inside glass appear dry. Pint-sized jars hold individual eggs half embedded in damp sand. The plastic jar tops have ¼" holes around the perimeter allowing for air circulation. Water collecting on the tops drips through the holes into the jar but not on the egg thus keeping the substrate damp. The jar method also solves the problem of identifying which animal hatched from which egg and, most important of all, no escapes.

The room the incubators are in is air conditioned, usually dark and the incubators are kept between 80 and 85°F depending on the type of eggs. Minimum-maximum thermometers placed in each incubator (laid on the jar tops for best readings) are excellent for detecting any heat problems.

Most eggs are handled freely. Some of the more sensitive ones, such as python eggs, are handled with surgical gloves to prevent excessive contact with skin oils. On occasion we'll even dip eggs in a mild chlorox solution, which gives a good bacterial protection.

For large python eggs 4" X 4" plastic food containers are used with a Baccto Peat substrate, which retains moisture longer than sand and is sterile. Since python eggs are too large for a top to go over them the containers are left open. When hatching is evident (slits in the shell) the egg container is placed in an empty incubator till the



American Association of Zoo Keepers

NATIONAL CONFERENCE

SAN DIEGO, CALIFORNIA

AUGUST 23 - 27, 1976

CONFERENCE HEADQUARTERS will be the Sheraton Airport Inn, 1590 Harbor Island, San Diego, Ca. 92101. Tel: (714) 291-6400. The room rates are as follows: Singles - \$21.00, Twin or Double - \$26.00, Suites - \$75.00 (These rates do not include a 6% city room tax).

The REGISTRATION of \$30.00 per person will include banquet, cocktail reception, and luncheons. Early registrations will be appreciated - send your registration fee to: Gerald Thomas, 3743 Brems, San Diego, Ca. 92115. Make checks payable to: AAZK Conference. You may also register at the conference on Monday, Aug. 23rd at 9:00 am to 2:00 pm in the Beach Level room.

The Tentative SCHEDULE includes a tour of Sea World (including behind the scenes), a trip to the San Diego Wild Animal Park (in the evening), and an all day visit to the San Diego Zoo (including lunch). The banquet speaker will be Bill Burrud, noted conservationist and TV personality.

On Friday Aug. 27th there will be a post-conference tour of the Los Angeles Zoo hosted by Mike Dee. The tour includes a complimentary box lunch. If you plan to attend the post-conference tour please let Mike know so that he can make plans based on the size of the group. Mike's address is: 1141 Western Ave., Glendale, Ca. 91201.

If you would like to present a paper slides, or film; send information on the title, subject, approximate length, and equipment required as soon as possible to Mike Dee.

There will be an Animal Art Auction after the banquet Thursday evening. Save all your objects d'art, make a few, buy a few and bring them to San Diego for the Auction. Proceeds go to AAZK to help defray the cost of the conference.

We are in the process of putting together a special mailing containing more information and hotel reservation forms.

hatchling emerges. If more than one egg is hatching at a time and you're running out of room, each egg is placed in a plastic bag. Again, separating the specimens is for ease of identification later.

After use, the tank, gravel and containers are disinfected and set up again for further use. A few of the species we have hatched thus far this year are: Leopard geckos, Burmese pythons, Indian pythons, and Tegu lizards with still more to come.

#

The writers of the RAP column ask for notes, suggestions and ideas dealing with herptile husbandry. Questions or comments concerning reptile pathology may also be sent, as the National Zoo maintains an excellent pathology department. The submitting author need not prepare a formal article. Material for the column may be sent to Bela Demeter, 4593-2 MacArthur Blvd., N.W. Washington, D.C., 20007.

"LOOK ALIKES" TO BE TREATED AS ENDANGERED USDI News Release June 18, 1976

Three non-endangered species of sea turtles that look like their endangered cousins have been proposed as the first species to be treated as endangered under the "Similarity of Appearance" clause of the Endangered Species Act of 1973.

The proposal, published jointly with the National Marine Fisheries Service of the Department of Commerce in the Federal Register, would treat the green sea turtle, loggerhead sea turtle, and Pacific ridley sea turtle as "endangered" because they so closely resemble three other species already listed as endangered: the hawksbill, Atlantic ridley, and leatherback. The rulemaking is necessary because the endangered turtles cannot properly be protected from commercial exploitation since many specimens are captured each year and brought into the United States mistakenly or fraudulently labeled as belonging to one of the three look-alike species. Interested persons have until September 14, 1976, to comment on the proposal.

SNOW LEOPARD CUB BEING HAND-RAISED Brookfield Zoo

A snow leopard born 9 June, 1976 is being raised by Dr. Dan Laughlin, the zoo's veterinarian.

Because breast cancer necessitated a radical mastectomy two years ago for the mother, she was unable to nurse her new...and 14th...baby. Thus, at the cub's birth, zoo staff members took it from the parents, Lhasa and Ikaz, both 15. Since that time Laughlin and his wife, Pam, have been caring for the male cub, which they named Shiva. The Laughlins have been bottle-feeding it $1\frac{1}{2}$ - 2 oz. of formula every 3 hours. The animal has since been removed from the incubator and Laughlin is adding a teaspoon of a fortified feline meat diet to its formula, and has spaced the feedings to five times daily.

Snow Leopards, an endangered species, are found in south-central Asia at heights of 10,000 to 20,000 feet. There the atmosphere is more sterile than at lower altitudes. Suspecting that these leopards are born without...but must slowly acquire...immunity to bacteria of lower altitudes, Laughlin and director Dr. George Rabb decided to suit procedure to the species. Instead of exposing the animal to the various hospital staff that would normally handle it, the zoologists agreed that the cub's best chance for survival lay in the constant care of one or two people, i.e. in Laughlin's home.

While rare for Brookfield, cases of hand-raising animals present a problem of imprinting. Laughlin hopes to keep this problem to a minimum with Shiva. The vet and his wife handle the cub as little as possible and are pleased that Shiva spits and growls at them. In 3 to 5 months, Laughlin hopes to introduce the cub to a female snow leopard of the same age.

Zoos have met with very limited success in the breeding of snow leopards and the raising of cubs. The Brookfield Zoo has 5 snow leopards.

LIVING TROPHIES, by Peter Batten is a new book about zoos and the conditions found in them. It is published by the Thomas Crowell Co. Watch for a review of this controversial work next month, in the August issue of Animal Keepers' Forum.

KEEPERS AND COMMUNICATION - Part IV The Written Word by Judie
Steenberg, Topeka Zoo

Isn't there something you should be writing about? Either recording in complete form for future reference or to be communicated to others so they too may share in your ideas and benefit from them? You may want to write to inquire, to inform or to persuade. These are three basic forms of written communication that easily apply to Keepers.

Writing is really not all that difficult and with a few basic guidelines you too can be using this medium to express yourself. To be effective, written communications require organization and planning. You must have an explicit meaning to begin with, a justification or reason for your communication. With that as your starting point, develop your message. Think about your readers and how they will react to what you are saying. Talk their language. Use clear and simple english and keep in mind the basic principles of writing, unity, coherence and emphasis.

For unity be careful of sentence fragmentation, loose hook-ups, word omission and comma splices of main ideas. Coherence is the tying together of main ideas and topics. Link words, phrases and sentences so their intended meaning is clear. Emphasis gives power to the statement of key ideas. Also, strive for accuracy. Check facts, spelling, statistics and the overall appearance of your copy.. Be yourself throughout your writing.

Who is your reader? Why are you writing? To inquire, inform, persuade or perhaps entertain? Think before you write. Select a topic, list its possibilities and select the most interesting. Organize around a single subject and in a logical manner. Write in a way that you would enjoy reading.

An important part of writing is rewriting. There are very few people who can sit down and write an article, report or technical paper without editing and rewriting it, often several times. The more important your message the more care you should take to get it across in the best way. The great dangers of writing are wordiness (empty words and expletives), meaningless repetition and clumsy overloading.

It helps to develop dictionary skills and you will need to spend some time developing your ability to write. Remeber to read your work

several times. Did you enjoy it? Why or why not? These are important questions to ask yourself.

Writing is a permanent, long-term method of communication. It is a most valuable way to convey your ideas and share your knowledge.

In these four papers I have attempted to identify and comment on:

What communication is,

Why it needs careful attention

When and where keepers are involved with it and

How to accomplish it.

Volumes have been written on the subject of communication. It is a complex and vital part of all we do. And, it begins with YOU.

KOALAS TO ARRIVE AT THE SAN DIEGO ZOO

San Diego Zoo director Charles Bieler has announced that the government of Australia is to present six koalas to the people of America as part of its contribution to the Bicentennial celebration. The koalas will be housed at the San Diego Zoo where they will join the only existing koala colony outside of Australia.

The official announcement came from Australian Defense Minister D. James Killen in Washington, D.C. He said, "The Australian government has decided on a 'once-only waiver' of an embargo on the export of koalas to make this special gift possible. Its decision was influenced in part by the death earlier this year of Teddy, star of the 'I hate Qantas' television commercial and the only remaining male at San Diego."

The six koalas, two males and four females, will come from the Lone Pine Koala Sanctuary near the city of Brisbane. All six were born in captivity. It is felt this should improve chances of the Zoo breeding a larger colony.

The Zoo's koala colony began with the arrival of Cuddles and Snuggles in 1925. In the 1950's the Zoo received from the New South Wales government four koalas which had been born at Sir Edward Hallstrom's animal preserve in New Guinea. Currently, three female koalas comprise the Zoo's colony.

ANIMAL NUTRITION by Dr. Richard S. Patton, Director of Professional Education, Mark Morris & Associates, Topeka, Ks.

Question: May I please have the "world famous" Philadelphia "zoo cake" recipe? Is this used in diets other than primates?

Answer: The people at the Philadelphia Zoo have several "zoo cakes" that they use. These are listed in IZY #6. I might suggest you could have any questions concerning their exact use and formulation answered by Dr. Robert Snyder, Director of the Penrose Research Labs., located at the Philadelphia Zoo. Historically, the Philly zoo is avant-grade where nutrition is concerned.

Question: What are your thoughts about the addition of garlic to psittacine diets? Keepers have been known to use it for worms in macaws.

Answer: Garlic contains several compounds, among them alliin and allicin. Alliin is related to the amino acid cysteine. When alliin is cleaved by the specific enzyme allinase, the odor of garlic develops. Alliin has no known value, itself, except that the sulfur containing amino acid can be limiting in some diets. The products of the enzymatic process are antibacterial.

Personally, I see no harm in the use of modest amounts of garlic if you're so inclined, but there are specific, proven remedies for parasites in birds, which I would prefer.

DIRECTOR SPEAKS OUT ON EDUCATIONAL ROLE OF ZOOS

METRO TORONTO ZOO, May 3. -- "In the past it was thought that having animals in cages, accurately labelled, constituted an education for the viewing public," Metro Toronto Zoo Director Dr. Philip Ogilvie said this week in an address to the members of the Arizona-Sonora Desert Museum in Tucson, Arizona. "We continue to teach meaningless lists of scientific names, compendiums of dietary, reproductive and behavioral anecdotes," he went on, "and believe we have educated in spite of all evidence to the contrary."

What zoos must provide is "significant environmental education" for this is our "only hope for change in man's detrimental exploitation of environment".

WWF CONGRESS SCHEDULED Outdoor News Bulletin

The World Wildlife Fund Fourth International Congress will meet in San Francisco, California at the St. Francis Hotel, November 28- December 1, 1976, the Wildlife Management Institute reports. The Congress theme is "THE FRAGILE EARTH: TOWARD STRATEGIES FOR SURVIVAL."

Conservationists from 26 nations and representatives from government and industry will convene to discuss the principal issues affecting the world environment. More than 1,000 people are expected to attend.

For further information, interested persons should contact The World Wildlife Fund, 1319 Eighteenth Street, N.W., Washington, D.C. 20036.

Things To Remember:

* Send all articles for the AAZK journal to the AKF editors as soon as possible. Deadline for articles for THE KEEPER Vol. II, 1976, is 1 September 1976.

* If you move please send us your new address. Bulk rate mail is not forwarded and each returned newsletter now costs us 13¢ for postage.

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AMERICAN ASSOCIATION OF ZOO KEEPERS

ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

VOLUME III NUMBER 8

AUGUST 1976



ANIMAL KEEPERS' FORUM

Edited by Ron Kaufman and Chris LaRue

Topeka Zoological Park 635 Gage Boulevard Topeka, Kansas 66606 USA

Animal Keepers' Forum is a non-profit monthly publication distributed to professional zoo keepers independently and by the American Association of Zoo Keepers as a service to its members. Animal Keepers' Forum includes news and official announcements of the AAZK.

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OKAPIS AT BROOKFIELD

On July 5, Brookfield Zoo welcomed its second baby okapi this year. The okapi filly, which weighed an estimated 60 pounds, was up on her feet within 30 minutes after her birth. She has been observed romping in the exhibit yard and nursing from mother Oseena.

The young okapi is the result of the mating 14 months ago of Oseena, born at Brookfield Zoo in 1966, and Uhuru, 7½, born in the Frankfurt Zoo. The filly brings to six the number in Brookfield's okapi herd.

Brookfield Zoo was, in 1959, the site of the first okapi birth in America. Since that time Brookfield has had 11 okapi births. The 1974 census counted 53 okapis in zoos of the world, 41 of which were born in captivity. That year in the United States there were 18 okapis, 15 of which were born in captivity.

INDIAN RHINOCEROS ARRIVES AT TORONTO Metro Toronto Zoo

A young male Indian Rhinoceros arrived at the Metro Toronto Zoo on June 28. The animal was shipped from Hamburg, West Germany on June 12. It is the first Indian Rhinoceros in Canada.

The five-year old rhino, named Vinu, was born in the Mysore Zoo in India. He was purchased from the Ruhr Zoo in Gelsenkirchen, West Germany for \$51,000. He weighs nearly 1,000 kg (2,200 lbs.).

A female Indian rhino is expected to arrive at the zoo later this year or early next year.

AAZK AWARDS CHAIRMAN RESIGNS

John A. Siegal, Chairman of the AAZK Awards Committee has resigned from that post effective immediately according to Bela Demeter, AAZK President. Mr. Siegal has served AAZK faithfully for several years and his work for AAZK is appreciated. Before replacing John, the procedures and functions of the Awards Committee will be re-evaluated at the San Diego Board meeting this month. Any members with ideas or suggestions may submit them to Bela or any other Board member before or during the San Diego Conference.

AAZK HEADQUARTERS MOVED

Headquarters for the American Association of Zoo Keepers has been moved to the National Zoological Park, according to Bela Demeter, president of the organization. The National Zoo has been generous to supply AAZK with a completely equipped office, including file cabinets, typewriter, supplies, etc. Further, the Friends of the National Zoo has granted AAZK \$1,000 per year, while Demeter is president, as a salary for a part-time secretary. The secretary will be paid \$3.00 per hour, and will work 8 hours per week. Ms. Lee Glasco has been hired to fill the position, she is a docent at the zoo. Ms. Glasco will handle the membership services, financial records, and routine correspondence for the organization. She will also maintain the files and assist the President as necessary in running the organization. The new address for the American Association of Zoo Keepers is: AAZK, National Zoological Park, Washington, D.C. 20009.

Note: The editorial office for Animal Keepers' Forum will remain in its present location: 635 Gage Blvd., Topeka, KS 66606.

CALL FOR PAPERS

Deadline for Vol. 2, 1976 of THE KEEPER: Journal of the American Association of Zoo Keepers is October 1, 1976.

America's journal of zootechnology, first published last year, has been well received. Over 600 copies have been distributed so far, including many to zoos in Canada, South America and Europe. The Keeper is a membership service of AAZK and is sold separately to non-members. Papers destined for The Keeper can cover any of a wide range of topics in the zoo field. Behavior, diets, veterinary medicine, reproduction, exhibit design, and care of the new-born are just a few examples. Papers should be submitted typewritten, double-spaced on regular 8½ x 11 white bond. Photographs should be black and white. Drawings should be simple line drawings using black ink on white paper.

All articles submitted for publication are subject to review by the editors. Send papers to: AAZK Journal, 635 Gage Blvd., Topeka, KS 66606.

INCUBATION RECORDS by Sam Davis, National Zoo

Have you ever needed information and not been able to find it or have you kicked yourself because you didn't write something down? Everyone working in biology should realize the importance of collecting data and the zoo is an ideal place for doing just that.

Past reptile incubation records at the National Zoo are almost non-existent or disorganized if there are any. We decided to set up an easy method of keeping incubation records. The first thing we did was to get a record book (you can use any notebook) and divide it into 12 columns. For example, the first should look like this,

Egg	Specimen	Date	Weight(gms)	Length(mm)	Width(mm)	Date Hatch	Date Incub.
Egg	Specimen	Date	Weight(gms)	Length(mm)	Width(mm)	Hatch Period	
1A	<u>Naja naja</u>	1/1/76	12.3	15.7	7.6	3/1/76	61 days
B	<u>" "</u>	"	13.5	16.9	6.1	2/27/76	58 "

The second page should look like this,

Weight

<u>Young</u>		<u>Comments</u>
Weight	Length	
1A 6.7	28.6	All eggs put in individual jars with peat substrate. Candled 1/1/76...fertile Candled 1/1/76, fertile.
B 6.1	27.5	

The first clutch each year is designated #1 and each successive clutch is assigned a number in sequence. Each egg within a clutch is assigned a letter. In addition to lettering each egg, the clutch number and letter is printed on each egg container. Except for the "comment" column, the remaining columns are self-explanatory. Incubation methods used, candling dates and results, egg condition during incubation, dead embryo information and much more can be written in the "comment" column. Don't skimp with this column, allow plenty of space.

A tablet on each incubator lists clutches, specimens and probable hatching dates of incubating eggs. In this way a closer watch can be kept on eggs around hatching time.

When specimens hatch, weights and measures are recorded in the "egg book". When embryos die the eggs are opened and the appropriate information is recorded in the "comment" column. Dead embryos are preserved in 10% formalin or 70% alcohol. Each preserving jar has a label with the scientific name, approximate death date, egg number and letter. All these jars are stored in museum cases by year and alphabetically by genus.

By gathering all the necessary information you will begin to see its correlative aspects in reptile breeding. An appropriate time to introduce or separate pairs of animals will become more evident. Incubation periods, clutch sizes and better ways of improving incubating techniques will be right there in black and white, ready to use.

#

SECOND QUARTER FINANCIAL STATEMENT (1976), AKF

<u>Item</u>	<u>Credit</u>	<u>Debit</u>
Cash on hand 31 March 1976	\$1255.77	
AKF subscriptions	20.00	
AAZK Journal sales	125.00	
Printing supplies		\$ 382.47
Typewriter rent		15.53
Journal refund		5.00
Telephone		7.45
Typewriter purchase		491.63
Postage: Apr. - Jun.		
Canada, foreign		40.57
Bulk deposits		101.02
Petty cash		15.53
Office supplies		12.34
	<u>\$1400.77</u>	<u>\$1071.54</u>
	-1071.54	
Cash on hand 30 Jun '76	\$ 329.23	
Accounts receivable	\$ 20.00	

ANIMAL KEEPER SURVEY II

ATTENTION ! Recently you should have received a survey form along with AAZK Conference information. The survey is being conducted for AAZK and as a part of my studies in "Zoo Operations & Animal Management". The purpose of this survey is to develop a profile of today's Animal Keeper. Your participation is very important to the success of this project. If you have received a survey form but are not working as a keeper, please pass it on to an animal keeper you know, explain its purpose and ask that the survey be completed and mailed to me. Thank you for your cooperation.

Judie Steenberg, 1886 Burgess Ct. W., Topeka, KS 66608.

SECOND QUARTER FINANCIAL REPORT, AAZK

<u>Item</u>	<u>Credit</u>	<u>Debit</u>
Actual Bank Balance, 1 Apr. 1976	\$2450.58	
Deposits, Dues & Patches	709.35	
Printing (office supplies)		\$125.25
Refunds (pro-rated memberships)		130.00
Animal Keepers' Forum Account		405.00
Shoulder Patches		207.55
	<u>\$3159.93</u>	<u>\$867.80</u>
Cash assets, 31 Jun. 1976	<u>\$2292.13</u>	

REQUEST FOR INFORMATION

Linda Ervine of the Metro Toronto Zoo would like to communicate with keepers who care for young gorillas. The zoo has seven juveniles, all wild born and Linda is attempting to determine their ages more accurately. She would like information on the ages at which developmental landmarks occur, i.e. teething stages, crest appearance, weights and measurements, disappearance of the white tail spot, etc. Linda is especially interested in gorillas that are mother-reared. Send any pertinent information to: Linda Ervine, c/o Metro Toronto Zoo, Box 280 West Hill, Ontario, Canada M1E 4R5.

CONSERVATION - ASIAN STYLE by Tom Goldsberry, Portland Zoo, Portland,
Oregon

Although it's encouraging to find that conservation and ecology are fast becoming America's favorite four-syllable words, it's unfortunate that so much of the input we now receive concerns only Africa.

Aside from an occasional article, or a new, glossy four color book, little is ever heard of the day-to-day struggle for wildlife in Asia. An excellent case in point is Thailand.

For example, the Thai government has recently taken steps to protect Koh Surin, Thailand's last wild island. Koh Surin, located in the Andaman Sea fifty miles off the coast of Ranong and Phangna provinces, is the last remaining uninhabited island in Thai waters. While some of the trees on the lower slopes have been felled, the forest is generally intact. The forest supports a rich bird and reptile fauna, including hornbills and flying lizards.

The shoreline is rocky and steep except in numerous coves where sandy beaches offer ideal conditions for the nesting of marine turtles. As a first step, the Wildlife Division is supporting a 20-man multidisciplinary ecological survey of the island which will include botanists, herpetologists, ecologists, ornithologists, entomologists, mammalogists, and ichthologists.

The World Wildlife Fund, taking cognizance of Thailand's role in wildlife conservation, has recently approved three grants to Thailand. Project 1019 concerns Khao Yai National Park, the largest national park in Thailand. The park is one of the more important areas for conserving the Indo-Chinese tiger Panthera tigris corbetti together with its prey species; it is the home of about 200 elephants and has a large population of the endangered Pileated Gibbon Hylobates pileatus, one of the world's rarer primates. The park is under heavy pressure from poaching and forest clearing for timber and cultivation. Under the WWF grant, amounting to \$100,000.00, vehicles, motorcycles, radios, and funds for the construction of ranger stations will be supplied.

In the meantime, much is being done to control the trade in wildlife and wildlife products. The Wildlife Division has been working hard to enforce reasonable quotas on the animal dealers; new ministry regulations passed in February, 1976 include 165 animals on the Category I protected list, of which only three mammals and thirty-three birds can be traded under strict controls, i.e., each dealer can ship only thirty talking mynahs. The Division is also working hard to control the trade in skins. In March, fifteen tiger skins, eleven leopard skins, and three clouded leopard skins were confiscated from a distributor in the Yannawa district. Thai tiger and leopard skins are now for sale in large quantities in Hong Kong.

Another bit of progress has been the placing of flying squirrels (Sub-family Petauristinae) on the Category I protected list, placing all species under strict quotas. This will make the trade in flying squirrels much more difficult and may result in stopping the trade.

On the other side of the coin, however, is Bangkok's Sunday Market. Joy Adamson, of Born Free fame, on a recent trip to Thailand remarked, "It is a great disgrace to Thailand that the animal dealers at the Sunday Market are allowed to cruelly break off the teeth and claws of squirrels in order to convince customers that the animals do not bite"

It is most unfortunate that Thailand has no laws controlling cruelty to animals. However, the Bangkok Municipality does have control over the activities of the Sunday Market and the Forestry Department and the Association for the Conservation of Wildlife are currently urging the municipality to pass a set of regulations controlling cruelty to animals.

So the animals win a few and lose a few. Until the time comes when every country begins to stack the deck a bit in favor of wildlife, the animals will continue to be dealt a losing hand.

REFERENCES

Conservation News of Southeast Asia: Volume 10, Number 1, March, 1976.

OF VETERINARIANS AND KEEPERS by Michael K. Stoskopf, DVM, Overton
Park Zoo and Aquarium, Memphis, Tenn.

New construction or maintenance and repair of existing buildings is always a welcome project in any zoo. Unfortunately, it rarely, if ever, is done by "zoo people". This, of course, causes many problems, and every keeper who has been in a zoo, even a short while, can recite countless examples of poor design or lack of foresight. Aside from architectural design problems, however, there is a serious problem which can cause the agonizing death of an unsuspecting animal after even the simplest repair job. A good keeper can prevent it.

Hardware disease or traumatic reticulo-pericarditis can affect any ruminant. Hardware disease is caused when a foreign object, usually metal, punctures the reticulum of the ruminant stomach. The reticulum or honeycomb is a special compartment of the four stomached animal which retains heavy foreign objects a ruminant might accidentally ingest. No problems usually occur unless these objects are sharp such as wire and nails.

Sharp objects are forced to penetrate the reticulum wall by the muscular contractions of the organ. This causes a leakage of stomach contents into the abdomen resulting in, at the very least, a local peritonitis. Peritonitis is very painful and this stage of the disease might be seen as an animal going off feed and hunching it's hind legs underneath it, as evidence of acute pain in the abdomen. Wild animals, of course, show fewer signs than domestic stock, and this stage might go unnoticed. At this point several things might happen in the animal's abdomen. Fibrin clotting mechanisms and natural immune reactions might wall off the puncture preventing more leakage and further penetration of the object, or the object can be forced further and further through the wall of the reticulum by the stomach's own contractions.

If this happens there is danger of puncturing the liver. More commonly though, the object is pushed right through the diaphragm which lies just in front of the reticulum. Once through the diaphragm, the object most often passes right to the heart and punctures the heart sac or pericardium. This lies within an inch or two of the forward reticulum wall. The natural respiratory movements and the movements of the heart when beating make this a nearly inevitable end point. While earlier

signs were digestive upset and pain, new signs will take on a respiratory pattern. The object carrying organisms from the fermentation vat stomach will cause localized pneumonia as it passes through or near lung. Breathing may be shallow. Coughing and signs of stress may accompany a high fever. When the object finally engages the pericardium, death usually is not far behind. The irritation and infection caused by the object will result in massive amounts of fibrin adhering to the heart. These masses will constrict and eventually stop the heart. They also give the disease the pathologists' nickname of "shaggy heart disease". There are, of course, animals which will merely drop dead suddenly, should the object puncture a heart vessel or the heart itself, causing hemorrhage into the heart sac.

There are some chances to treat the disease. The animal's rumen can be opened and the contents removed, hopefully including the offending object if it remains even partially in the abdomen. Animals have even been saved by removing two or more ribs and taking the object out of the chest. These are obviously drastic measures and prevention is certainly the best cure for the disease.

Keep in mind this problem is not rare. Ruminants are generally very indiscriminant eaters. If a nail or wire is there, they will eat it along with the rest of the mouthful. In certain nutritional deficiencies they might even seek out these items. Not only are ruminants lacking in discretion, but so are most workmen who service zoos. Years of sloppy habits allow them to discard nails, wires, pieces of fencing or scraps of metal where ever they might fall.

The veteran keeper knows this and supervises work being done in his area if at all possible. If this is impractical, he or she scrutinizes the compounds for any sign of debris prior to turning out the occupants. Only through relentless and persistent inspections of lots and compounds, alert for any bit of wire or metal, can a keeper prevent animals from suffering the fate of traumatic reticulo-pericarditis.

*THE MILWAUKEE CHAPTER OF THE AAZK SENDS ITS *
BEST WISHES FOR A GOOD CONFERENCE IN SAN DIEGO

BOOK REVIEW: Living Trophies by Peter Batten, Thomas Y. Crowell Co., New York, 1976, 246 pp. \$9.95.

We wrestled with this one for a long time. A review of this book is difficult because this book is difficult. Batten assumes the role of an authority on good zoo management. He may well be, but his one-sided views on the ingredients of a good zoo make his authority debatable.

Batten writes about zoos. Your zoo, our zoo, everybody else's zoo and what is bad about them. He airs dirty laundry, then strings zoo officials on the line alongside and beats them like dusty rugs. He looks for the worst in a zoo, and concludes that if anything is bad, the entire zoo is bad.

The authors tendency to blacklist is bad enough. But his frequent false statements and inaccurate conclusions add insult to injury. The reader should approach Batten's creation with an eye toward reality and a handful of grains of salt, such is his low credibility.

It is unfortunate that many readers may be as one-sided as the author. An eye toward reality is important because Batten does manage to make some good points. In reading this book one should think not of what the author said, but rather, what he was trying to say. To blindly strike out against all that Batten says would be foolish--- a creative, changing profession such as zoos must be able to accept criticism. However, you may have to buy this book if you desire to read it because it's unlikely you'll find it in your zoo library.

BEAR CONFERENCE SCHEDULED Outdoor News Bulletin

The Fourth International Conference on Bear Research and Management will be held in Kalispell, Montana, February 20-23, 1977, according to the Wildlife Management Institute. Those wanting more information or to present papers should contact Clifford J. Martinka, Glacier National Park, West Glacier, Montana 59936.

IMPORTANT DATE TO REMEMBER -- October 3 - 7, 1976 for the 52nd Annual AAZPA Conference at Baltimore, MD.

FEDERAL WILDLIFE PERMIT OFFICE ESTABLISHED

USDI News release July 2,
1976

A new office has been established to implement an international treaty regulating commercial trade in and movement of the world's endangered wild plants and animals.

The Federal Wildlife Permit Office will also ease the plight of scientists, zoos, and others who engage in activities involving federally protected wildlife by reducing red tape and simplifying the permit issuing process while maintaining needed controls. Frequently, legitimate activities involving wildlife may require clearance or permits from several government offices including the Departments of Health, Education and Welfare, Treasury, Commerce, Agriculture, and Interior. The Federal Wildlife Permit Office will first work toward coordinating permits issued within the Fish and Wildlife Service, and later may become the coordinating body or clearing house for the issuance of all Federal permits involving wildlife.

A major responsibility of the office will be to ensure that the United States complies with the Convention on International Trade in Endangered Species of Wild Fauna and Flora. The treaty was signed by more than 50 nations in 1973 and has so far been ratified by 26.

WADING BIRD CONFERENCE SCHEDULED

Gundoor News Bulletin

The National Audubon Society and the U.S. Fish and Wildlife Service are sponsoring a conference on wading birds in North America. The meeting is scheduled for October 14-17, 1976 at the Mills Hyatt House in Charleston, South Carolina.

There will be four general sessions on the broad topics of behavior, conservation and management, populations and surveys, and ecology. Each session will contain several invited papers, followed by submitted papers in the appropriate fields. A series of workshops is planned also.

Conference organizers anticipate organization of a "Working Group on Wading Birds" to facilitate information exchanges and further studies on wading birds. For more information write: Research Department, National Audubon Society 115 Indian Mound Trail, Tavernier, Florida 33070.

Want to Write for AKF? Read On!

Animal Keepers' Forum is a publication for you, the animal keeper. You have valuable information that other keepers would like to hear. Send your know-how to AKF, we'll spread it around! Items submitted to AKF do not have to be formal papers (though the editors drool when one arrives). News, short notes, even something scribbled on a paper towel is as good as a T-bone steak! The following is a list of suggested topics for news items, short notes and papers. This outline is a guide to only a few subjects, there are many other possibilities.

I. News Items

New exhibits
Births and hatchings
AAZK Chapter activities
Zoo happenings

II. Animal Care Techniques

Diets and feeding
Capture and handling
Identification and marking
Hand raising baby animals

III. Behavioral Observations

Births
Nesting or denning behavior

Breeding behavior
Social interactions
Unusual behavior

IV. Education

Keeper training programs
Public speaking programs
Zoo seminars
Research projects

V. General Zoo

Job safety
Conservation projects
Exhibit techniques
Veterinary case reports

When writing your paper these suggestions may be helpful in improving the quality of the article:

1. Title should reflect content of paper.
2. Make detailed observations and avoid generalities.
3. When recording behavior, note animals' actions and try to avoid incorrect interpretations.
4. Avoid anthropomorphism; be objective.
5. Include pertinent data, ie. times, dates, weather, type of enclosure and animal's history.
6. Be concise; avoid run-on sentences.
7. Criticism should be followed by constructive suggestions.

TORTOISES HATCH AT ZOO

Galapagos tortoise eggs are hatching at the San Diego Zoo for the first time in five years.

Four tiny tortoises had found their way out of their shells by late July 1 and three more were in the process of hatching on July 2. Four more eggs--for a possible total of 11 hatchings--are expected to hatch soon.

Although egg-laying had occurred in the tortoise herd over the last several years, the eggs proved to be infertile. The Zoo's reptile curator, Dr. James Bacon, has been working with Dr. Tom Fritts of the San Diego Natural History Museum for more than a year to attempt to solve the mystery of the infertile eggs.

"We've looked at a number of factors which we thought might be responsible," Bacon said, "and we've done several things differently with the adult herd and with the eggs."

Bacon said some of the changes were dietary. The tortoises were given kale, banana trees for roughage, acacia and eugenia browse for biochemical diversity, and more cactus and less lettuce than they had previously received.

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AMERICAN ASSOCIATION OF ZOO KEEPERS

ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

VOLUME III NUMBER 9

SEPTEMBER 1976

ANIMAL KEEPERS' FORUM



Edited by Ron Kaufman and Chris LaRue

Topeka Zoological Park 635 Gage Blvd. Topeka, Kansas 66606 USA

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PATTON RESIGNS POST

Dr. Richard Patton, Director of Professional Education for Mark Morris Associates in Topeka will be resigning his post. Dr. Patton has taken a position in Los Angeles. He will no longer pen his popular feature in AKF entitled "Animal Nutrition". The AKF staff wishes to extend its deep appreciation to Dr. Patton for his contributions and support for this publication. He has this staff's best wishes for good luck in his new job.

POSITION AVAILABLE

ZOO KEEPER with elephant handling/training experience. We are looking for an experienced keeper who has a good working knowledge of hooved stock, as well as capability to handle and train our 26 years old Asian elephant, and to help develop our future programs with pachyderms and expansion of an excellent hooved stock collection.

Starting pay: \$7,132 to \$7,842, depending on experience. Excellent advancement possibilities.

Those interested, please send resume to:

Mr. Dale Tuttle
Director
Dickerson Park Zoo
3043 N. Fort
Springfield, MO 65803 no later than September 18, 1976.

BELIEVE IT OR NOT

The proceedings of the 1974 Tri-Zoo Conference in Chicago will be made available soon to all AAZK members. Through the efforts of Jerry Houghlan of ZuPreem, and of Mike Dee, the proceedings will be printed in a format similar to the one used for The Keeper, volume one. Look for more details in future issues of Animal Keepers' Forum.

TREE KANGAROO BIRTH AT OKLAHOMA CITY ZOO by Steve A. Clevenger,
Oklahoma City Zoo

The grizzled grey or black tree kangaroo (*Dendrolagus ursinus irustus*) is relatively uncommon in captivity and, as such, any captive birth is noteworthy. Recently, however, we in the Hospital/Isolation area of the Oklahoma City Zoo were presented with a rare opportunity in chronicling one aspect of captive animal husbandry.

Our group of tree kangaroos (1.3) was received in late 1974 and has produced one offspring, a female, who was born in October of 1975. This youngster was discovered approximately three months before emerging from the pouch and was fully developed when we discovered her. Also, one stillborn or relected young kangaroo had been found on the enclosure floor about three months prior to the discovery of the female in the pouch. The October '75 female is presently about three-fourths grown and is still being raised by her mother.

During the first week in July we had been observing the mother for approaching birth because of certain unusual behavioral indicators. She displayed a limited degree of lethargy, she had been off food for about a week, and extensive cleaning of the pouch and surrounding skin had been taking place. This particular female is extremely docile and even-tempered and no difficulty is encountered in examining the inside of her pouch at regular intervals. On the morning of 7 July, I found a newly born kangaroo approximately $1\frac{1}{4}$ inches long firmly attached to the lower right nipple in the pouch. We estimated the age of the youngster at from 24 to 36 hours.

Since that time at regular intervals (3-4 times weekly) we have been making observations on the development of the young kangaroo. Due to the docility of this particular female, it has been possible also to take photographs of the youngster developing in the pouch.

Hopefully this data when fully gathered will provide the nucleus for a body of information which will insure the conservation and captive propagation of this New Guinea macropod.

OF VETERINARIANS AND KEEPERS

SEXUAL AROUSAL by Joseph Bielitzki, D.V.M.
Topeka Zoological Park

For a change, here is an article on sex. Most of us have at one time or another either watched or participated in the act of coitus, but have we really watched or even understood what was going on?

A zebra stud approaches a mare in heat, sniffs her genitalia and then displays a Flehmen lip curl. The next thing we see is the extrusion of the penis from the sheath followed by an erection. Somewhere between the male's approach and his sexual excitement, something has happened to initiate the physiological events necessary for coitus to occur.

Now, those of you who are skeptical say, "No zebra stud worth his weight has to get that close to a mare in heat to become aroused." Well, that is partially true. A mare in heat is capable of exciting every equine stud in the area. My question to you is, "What causes arousal?" Is it sight? Is it smell? Is it auditory? Is it tactile? Is it taste?

Quite probably, all the senses are involved with sexual arousal in the male. Most important, however, is the sense of smell. Olfaction is critical in most ungulates for arousal to occur. This is the only group of animals which display the Flehmen lip curl. The mechanical processes involved vary from species to species, but the behavioral response is somewhat consistent. First, the male sniffs at the female's genitalia either while the female urinates or laterally deviates her tail. Next, if the female has urinated, a small amount of urine is caught by the upper lip, which is extended and curled upward to aid in directing the urine to the nostrils. Along with the lip curl, the head and neck are extended upwards. In those species where urination is not essential for heat detection, the same movements are seen.

Something in the urine or near the genitalia has initiated arousal in the male. A chemical substance which is capable of causing a behavioral or a physiologic change in another organism is referred to as a pheromone. Most pheromones are thought to be a mixture of lipids or lipo-proteins of low molecular weight. The low molecular weight is

necessary to allow airborne transmission to occur between the male and the female, a sort of pinafore for the nostrils. In most ungulates, the pheromone involved seems to be a breakdown product of an estrogen Estradiol 17beta, which is found in the urine. In addition to a urinary product, the secretions of the female reproductive tract are modified during heat and may contribute to the olfactory stimulus.

Lastly, what organ is responsible for the detection of the small, but potent, chemical substance? Most ungulates possess a very good olfactory system, but some researchers feel that the vomeronasal organ, Jacobson's organ, may play a role in the processing of this information. Jacobson's organ is found in the dorso-rostral aspect of the reptilian mouth and communicates with the nasal passage and is the primary organ of olfaction in the reptile. In mammals, it has become small and almost vestigial but possibly does serve to detect pheromones by direct contact with these molecules as they are brought into proximity by the Flehmen lip curl. The vomeronasal organ communicates with the brain by a branch of the olfactory nerve. Consequently, it easily acts to monitor any lipids in the urine which are in too low a concentration to be detected by vaporization or the airborne spread of particles.

The act of sex is fun, a curiosity and wonder to watch, but it is certainly more complex than "Slam, bam, thank you, ma'am."

BOOK REVIEW from the Outdoor News Bulletin

Checklist of the World's Birds by Edward S. Gruson

212 pages. Published by Quadrangle/The New York Times Book Company, 10 East 53d Street, New York City 10022; 1976. Price \$10.95

Checklist of the World's Birds is a one-volume complete listing of all of the known bird species on the world. The usual nine to fifteen volumes have been computer-slimmed into one...a job too onerous before computer techniques.

This handy reference work provides the scientific and English common names of each species as well as the zoogeographic regions in which the bird may be found. For each entry there is a reference to other sources containing additional details.

ANIMAL KEEPER SURVEY II

closing date extended.... still time to participate.

The response to the survey is just over 20% to date. I know we can do better. The more data received the more meaningful the statistical results will be. Please, go find your copy of AKS-II, fill it out and mail it today. It will only require a few minutes of your time. If you have misplaced your copy feel free to write for a second. To allow for more participation the closing date has been extended to mid-September.

KNOW A KEEPER INTERESTED IN PARTICIPATING IN AKS-II
WHO HASN'T RECEIVED A SURVEY? PLEASE SEND NAME AND
ADDRESS TO: Judie Steenberg, 1886 Burgess Ct. W.,
Topeka, KS 66608

Thank you, to all who have returned surveys. To date 136 completed surveys have been received representing 55 zoos in the United States and Canada. Several interesting comments and suggestions have made, such as:

1. It would be nice to have an AAZK directory with keeper's names, addresses, zoo affiliation and major interests listed. (passed on to AAZK Board for consideration).
2. The survey should have been sent with a self-addressed, stamped envelope (that would have cost more than \$70.00 and all surveys not returned would have been a waste of money to AAZK - I hoped that participants wouldn't mind the 13¢ postage)
3. Age should have been included on the survey; salary ranges, number of keepers who are veterans, whether their zoo is run by a municipality, society, etc. plus a few other suggestions (I agree - there are several additional questions that might have been asked, perhaps another survey could be conducted to add to the data received in AKS-II).

Due to extending the closing date of AKS-II till mid-September, the statistical results will appear in the November issue of AKF instead October as previously stated.

In order to stay on top of the latest developments in herp care, the entire staff of R.A.P. attended the Reptile Symposium on Captive Propagation and Husbandry in Fredrick, Maryland (announced in June AKF). I thought the conference rewarding and was pleased to learn that there will be another one next year. In reviewing the conference material, I want to stress a point brought out by the Keynote speaker, Jaren Horsley. We should be careful to differentiate between observations (no matter how careful they are) and scientifically established conclusions.

One subject frequently mentioned was light. Ernst Hoffman (Herp magazine) synchronizes indoor lighting with the natural outdoor photoperiod using a sensing device. His indoor lighting is Daylight fluorescent and Vitalite bulbs. Many of his terrariums are connected to outdoor cages to give specimens natural light during the summer months. Hoffman has been successful in breeding a large variety of lizards, including the Leopard Gecko (Eublepharis) which he elaborated on in a separate paper. Joe Laszlo of the San Antonio Zoo discussed the importance of finding the right photoperiod and temperature for each species. While some reptiles will breed regardless of the environmental conditions, Laszlo pointed out that for maximum success in propagation we should attempt to duplicate nature as closely as possible. Most people now seem to be using Vitalite in combination with some other light, since this bulb most closely approximates the solar spectrum.

Diet and nutrition was another topic of discussion. Dr. Richard Patton talked about the new herp diet that he helped to develop. Nutritionally this herp diet matches whole food such as mice and rats, but is less expensive to feed. John Behler of the Bronx Zoo thought the diet of limited value for aquatic species since it does not maintain its integrity in water. It is too early to tell at this point how effective this diet is. We'd like to hear about your experiences with this diet (ZuPreem Herp) so we can write about it in a future column. Various forms of supplemental nutrition were also discussed. Hoffman mentioned sprinkling crickets with a vitamin-mineral powder for insectivorous lizards. Ernie Wagner of the Seattle Zoo puts a drop a cod liver oil (D₃). He seems to be having pretty success with that technique. Adding vitamin E to fish to combat steatitis was discussed. Dr. Patton mentioned that feeding vitamin E with fish was self-defeating since the

chemical makeup of the fish breaks it down. Adding vitamin E to the diet at some other time might be more effective.

One whole section dealt with general captive maintenance for various reptile groups. Mike Davenport at the National Zoo talked about the parameters to consider in the breeding and care of crocodilians. Dick Goergen of New York and Herb Harris from Baltimore talked the methods they each employ in maintaining their private collections of tortoises and snakes. The one paper on medical management of reptiles was presented by Dr. Clinton Gray of the National Zoo. John Arnett presented slides of the new reptile facility at Knoxville showing the unique modular plexiglas cages.

The conference was a good mix of zoo professionals and amateurs... amateurs only because they are not employed by a recognized zoological park and professional in every other sense of the word. For those of you who were not fortunate enough to be able to attend, the proceedings will be published by the end of this year. Keep watching AKF for information on how to get your copy.

The writers of the RAP column ask for notes, suggestions and ideas dealing with herptile husbandry. Questions or comments concerning reptile pathology may also be sent, as the National Zoo maintains an excellent pathology department. The submitting author need not prepare a formal article. Material for the column may be sent to Bela Demeter, National Zoological Park, Washington, D.C., 20009.

ZOO TO RECEIVE SEROW

Later this year, the Los Angeles will receive two Japanese Serow, a goat-antelope currently exhibited primarily in Japanese zoos. The Serow are a gift of the city of Nagoya, Japan, in honor of the U.S. Bicentennial. Nagoya Mayor Masao Motoyama formally presented the gift to Los Angeles Zoo Director Dr. Warren D. Thomas.

In return, the zoo in Nagoya will receive a pair of North American Rocky Mountain Goats, a relative of the Serow. The Los Angeles Zoo and the zoo in Peking, China will be the only zoos in the world, outside of Japan, to exhibit Serow.

THE LAND OF MONKEY GLAND STEAK by Tom Goldsberry, Portland Zoo

How's your gompou? Or, maybe you prefer to say Kori bustard instead. Either way, the gompou-bustard is but one of the 430 bird species found in Kruger National Park in the Republic of South Africa.

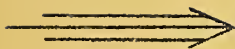
Kruger Park, celebrating it's fiftieth anniversary this year, is the huge (7340 square miles) home to approximately 1100 lions, 2400 elephants, and 180,000 impala, plus many other species including the rare sable antelope and midget lemurs. Part of the fun in visiting Kruger Park is getting there. Many visitors take the spectacular Panorama Route that includes some of the most beautiful scenery in South Africa.

Here, in the eastern Transvaal, the descendants of the pioneer Boer voortrekkers retain their Dutch identity, much the same as when Jan Van Riebaak first landed at Cape Town in 1652. Consequently, just when you're about ready to give up trying to pronounce Bobbejantert, Gladdeklipkop or Mogalakwenastroom, you suddenly find yourself in Brooklyn, Orlando or Frankfort.

I entered Kruger Park, after a pleasant day's drive from Johannesburg, at Crocodile Bridge on the Mozambique border. Not far from Crocodile Bridge lies the village of Hectorspruit. Hectorspruit is unique, not only because it was named for the founding father's dog but, it was near here in 1936 that a 690 lb. lion was shot, making it the largest specimen ever found in the wild.

Although 2/3 of the park is closed from November to May, there is plenty to see for the first time visitor. The entire region is a gigantic parkland, covered with indigenous shrubs and trees. Acacias predominate in the south, mopane in the north. Among these grow a rich assortment of other species, such as wild figs, "sausage" trees, combretums, marulas, whose fruit is greatly favored by elephants; and, along the Levubu River in the north, grotesquely shaped baobabs.

Accommodation in the Kruger National Park is provided in comfortable rest camps in which visitors sleep in rondavels or circular shaped huts which have most conveniences. The largest camps have well-appointed restaurants and shops selling all the requirements a tourist is likely to need.



...IT LOOKED NO WORSE THAN THE AVERAGE HAMBURGER
I'VE EATEN IN SOME ZOO CONCESSION STANDS...

It was at the Lower Sabie rest camp on the last day of my stay at the park that I read on the mimeographed luncheon menu, "Grilled Monkey Gland Steak". Why not? When it was served it looked no worse than the average hamburger of undetermined origin I've eaten in some zoo concession stands. A few bites convinced me I had a real monkey on my back and probably one in my stomach. I called the waiter over to explain the situation to him and to ask for a substitution. The waiter, a true of the veldt, with his sunburned face and hands like bunches of bananas with knuckles on them, listened impatiently while I presented my case. I tried to assure him that, although I was convinced he served the finest primate this side of the Limpopo, I didn't think I could honestly look a baboon in the face on the evening game run, knowing I had probably just devoured one of his cousins at lunch. Silence, then the waiter roared, "WHAT DO YOU EXPECT FROM A MONKEY?!"

I never did learn what gland it was...

Sources:

Discover the Republic of South Africa. South African Tourist Association, 1972.

Guinness Book of World Records, 1970 ed.

IN CASE YOU MAY HAVE MISSED IT,

we urge you to refer back to volume 193, number 4249 of Science magazine. The date was 16 July, 1976. Leaf through to page 235 for an excellent article by J.T. Marshall, Jr. and E.R. Marshall called "Gibbons and Their Territorial Songs". It's worthwhile reading...

ZOO RESEARCH...AN AID TO WILDLIFE CONSERVATION San Diego Zoo

The California condor may be a beneficiary of expanded research activities at the San Diego Zoo.

A testing procedure now under study in the Zoo's endocrinology lab, established in 1975, may lead to a breakthrough in determining the sex of animals which lack sexual dimorphism.

Results of hormone tests performed on a Los Angeles Zoo California condor, the only such bird in captivity, indicate that the specimen is a female. Acting in conjunction with Los Angeles wildlife authorities, San Diego Zoo researchers measured the hormone levels in fecal material and compared them to hormone levels of known male and female Andean condors. These test results may allow Los Angeles Zoo officials to obtain a mate for the bird and begin to breed them in captivity.

Although still in the experimental stage, Zoo researchers feel the technique is a viable one and will be a tremendous aid in pairing and management of exotic animals in captivity.

The endocrinology lab was established to study the inter-relationships between hormones and reproductive efficacy. Projects undertaken thus far include experiments to sex animals, determine sexual maturation and pregnancy, and a special project to study factors which produce identical twins.

Although sex determination may be made by measuring hormone levels in blood, the collection of blood samples is somewhat complicated. The chemical or physical restraints required for the drawing of blood can cause undue stress to delicate or very large animals. Thus, the possibility of using fecal samples to measure hormone levels will provide researchers with the necessary data to determine sex and avoid stressful situations for the animals.

Since little is known about the reproductive cycles of many exotic animals, studies of hormone production reflected in blood and urine samples will help scientists establish these cycles. Once normal hormone levels and reproductive cycles are recorded, researchers may be able to alter the cycles to permit elective breeding of certain species, particularly those labelled endangered.

A March of Dimes/National Foundation grant to the Zoo hospital enables staff members to study factors which produce identical twins, whether identical twins occur because of factors in the womb, or because of innate properties of the fertilized egg itself.

Zoo staff members are working with armadillos, the only known animals which regularly produce more than one embryo from a single egg. Results of the armadillo project may provide clues to identical twinning in humans, which carries increased risk of premature birth and associated infant death or brain damage.

Another aspect of research at the Zoo hospital involves chromosome studies. Chromosome, or genetic, studies aid researchers in understanding the inter-relationships of animals and the evolution of one species from another. Relationships among subspecies also may be studied.

Skin samples may be maintained and frozen in liquid nitrogen in the Zoo's cell bank. The cell bank lends itself to long-range storage of information contained in animals' genetic sets. Future scientists may call upon this information to study viral diseases and innate genetic abnormalities. By storing genetic information in cell banks, scientists may avoid some hereditary defects caused by inbreeding. Clarification of the mysteries which cause birth defects and abnormalities in animals may lead to means of avoiding or preventing similar birth defects in humans.

Although current Zoo research efforts center on reproductive and related studies, the research staff at the Zoo hopes to expand its capabilities in the future. Microbiological experiments, the study of viral and bacterial infections, will ultimately be incorporated along with increased behavioral research projects.

MORE RHINOS DISCOVERED from Oryx, vol.XIII, no. 4, July, 1976

The Malaysian Game Department has made the remarkable discovery of a group of 10-20 Sumatran rhinos in south Pahang Tenggara and north Johore. This may be the largest surviving group anywhere, and most important because it is the only viable breeding group on the Asian mainland - no other known group in Malaysia numbers more than three animals.

LATE BREAKING NEWS FROM THE CONFERENCE...San Diego, CA...27 Aug.....

Approximately 75 persons are in attendance at the conference being held at the Sheraton Airport Inn. Keepers from as far away as Washington, D.C. and Milwaukee are participating. The affair began on Monday and lasts four days. A post-conference tour of the Los Angeles Zoo is scheduled for today. The participants have heard a variety of papers including,

"My Run, My Way" by Pat Sammarco

"Gestation of Geoffrey's Cat" by Don Anderson

"Marmosets" by Claudia Collier

"Care and Breeding of Phelsuma madagascariensis" by Bela Demeter

"Primate Nutrition, Physiological and Psychological Factors" by

Jeff Roberts

and

"What is a Keeper" by Clayton Swanson.

Two Board meetings and a general business meeting have been held, chaired by President Bela Demeter. Among other matters, the meetings served to determine the following,

...annual conferences will be held beginning in 1978.

...the Board of Directors will consist of a president, vice-president, and three directors. There will be no executive secretary.

...new chairman of the Awards Committee is Jeff Roberts, president of the Brookfield AAZK chapter.

...an AAZK Directory is to be compiled by Pat Sass and Pat Sammarco.

...memberships in AAZK will be pro-rated semi-annually

...billings for renewal for 1977 will be sent in November, with those not renewing being dropped from the rolls on 1 January, 1977.

...the membership category of LIFE member will be dropped.

...numerous constitutional changes will be compiled and sent to all members

and,

...the proceedings of the conference will be published in The Keeper, volume two, due to be out by the end of the year.

THE 1978 CONFERENCE WILL BE HELD IN WASHINGTON, D.C. ANYONE WISHING TO HOST THE 1979 CONFERENCE, PLEASE CONTACT NATIONAL HEADQUARTERS...

BALD EAGLE PROPOSED FOR ENDANGERED LIST USDI

The bald eagle has been proposed for listing as endangered in 43 States and as threatened in five others, the U.S. Fish and Wildlife Service has announced.

Many people believe the bald eagle is already listed as endangered. The species is protected by the Bald Eagle Protection Act of 1940, but only the southern subspecies is listed as endangered. The Proposal would provide maximum protection for the species by extending the coverage of the Endangered Species Act of 1973 to all bald eagles in the continental United States.

For the convenience of wildlife managers, bald eagles have been arbitrarily separated into two subspecies with 40 degrees north latitude dividing the northern and southern breeding populations. The southern subspecies was listed as endangered when the first list was compiled in 1967, with the northern subspecies remaining unlisted. However, confusion has resulted, since the two populations have overlapping ranges. The current rulemaking resolves this problem by simply listing the species Haliaeetus leucocephalus as endangered in the lower 48 States except in Minnesota, Wisconsin, Michigan, Oregon and Washington where it would be listed as threatened.

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STUDENT DUES.....	\$ 5.00 ANNUALLY
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ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

VOLUME III NUMBER 10

OCTOBER 1976



ANIMAL KEEPERS' FORUM

Edited by Ron Kaufman and Chris LaRue
Topeka Zoological Park, 635 Gage Blvd.
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NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C. 20009.

DEADLINE FOR EACH EDITION OF AKF IS THE 20th OF THE PRECEDING MONTH.

LETTER TO THE EDITORS

I recently read your review on Living Trophies and feel a book such as this deserves a little more coverage, and from a different viewpoint. I would like to submit the following for publication in the next edition of Animal Keepers' Forum.

ANOTHER BOOK REVIEW: Living Trophies by Peter Batten, T.Y. Crowell Co., N.Y., 1976, 246 pp., \$9.95.

Peter Batten has written an angry book, and one that is long overdue. Anyone knowledgeable in wild animal behavior has only to tour the zoos of North America, and he cannot help but agree with Mr. Batten's major premise: Too many animals in too many zoos are being kept under unbiological and inhumane conditions. In this country, there are a small number of very good zoos, and a much larger number of very poor zoos. Somewhere in between lie many of our major zoos, with good exhibits and poor exhibits side by side. Small mammals and higher primates are most often the candidates for these poor exhibits.

The author comments on many problem areas in our zoos such as exhibit designs and architectural monstrosities, mother "rejections" and hand raising policies, docent and animal staff credentials, humane groups and minimum exhibit requirements, political intrigue and questionable zoo philosophies, etc. Of course, behind all this, he writes about what should be the utmost concern in every zoo person's mind; ethics.

P.R. material (so positive and charming) has its place in the zoo scene, but it should not exclusively dominate zoo association publications. Nor should it dominate every zoo book on the market. It is disturbing and yet refreshing to read a zoo book that frequently "tells it like it is". True, the author names names, and this approach may be repugnant to many readers. And true, there are other faults, but they are minor when considering the book as a whole. All zoo people, particularly those new to the profession, should read it. Ironically, Living Trophies may do more to help the situation of many of these zoo animals than any other recent zoo publication. Yes, this is an angry book, and it should be. After all, the only good zoo - is a good zoo!

Neal A. Stowe Green Valley, AZ



National Headquarters
National Zoological Park
Washington, D.C. 20009

FROM THE PRESIDENT

Bela J. Demeter

Bela Demeter

I wish all of you could have been at the San Diego Convention. Those of us who were there really enjoyed it. AAZK went through several organizational modifications as a result of our discussions at the Board meetings and with the various delegates. Some changes reflecting our current structure were made to the constitution, (which you'll be receiving shortly.)

Briefly, we now have five directors of the Board instead of seven. As you know, Rick Steenberg resigned in May. Terry MacDonald stepped down in August, also for personal reasons. They both have contributed a great deal to AAZK, and we look forward to their serving the association in other capacities. We decided to leave the number of Board members at five because that seemed to be a workable number. The less people we have tied up on the Board, the more we have available for positions elsewhere. The President is now assuming the responsibilities of the Executive Secretary, that position having been abolished.

Our headquarters is now at the National Zoo where we have a paid secretary, Lee Glassco, to handle business and financial matters. We hope in the coming years to use this office to its greatest potential to give you better and faster service. One service that will improve right away is the newsletter. We are now sending AKF first class rather than bulk mail so that it will get to you more quickly and reliably. This means an increase in our expenditures, but we feel that it is well worth it.

AKF will increase coverage of AAZK's affairs. Our objective is to keep you better informed about the workings of AAZK, what our goals are, and what we are doing at the moment to attain these goals. We'll tell you when we're behind on a project, as well as what progress we are making. We hope you will also become better acquainted with some of the people who are running your organization. You need to know who we are so you can tell us what you want.

Each of you soon will be getting two copies of the new brochure that we are having printed. The brochure explains our purpose and contains membership information. I urge you to pass one of these along to your fellow keepers or friends who have not yet joined us. We will be concentrating on growth during the next several months, indeed the next few years. Each of you is an invaluable part of that very important process. I believe AAZK has a lot to offer the professional zoo keeper, and I'd like to see one hundred percent participation from all those involved in animal care. We would like to represent truly the majority of these animal keepers, not just a few.

The regional coordinator system is being revised and soon you will have closer, more personal communication with headquarters through the R.C.'s. Regional conferences will be common in the not-too-distant future. And we are also working on an AAZK directory that will aid you in making direct contact with any keeper in your field, from Seattle to Singapore. This increased, personal communication among professionals in the zoo field is, of course, one of our major goals.

A number of changes in the form of resolutions came from the 1976 Conference in San Diego. They are: I. The address of the headquarters of AAZK shall be changed to: National Zoological Park, Washington D.C. 20009. II. Conference registration fees shall be set at a higher rate for non-members. III. Setting of AAZK conferences at a date other than summer (not yet resolved as to what period). IV. Memberships shall be pro-rated semi-annually rather than quarterly. V. All chapter projects set up by AAZK HQ will allow for a 50% split of the profits between the chapter and headquarters.

In short, this is a very exciting time for AAZK and for the zoo world. I really think that with your help the next few years will see us become a strong, viable, meaningful segment of the zoo community.

Please notice that AAZK Headquarters has moved - the new address is, AAZK HQ, NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C. 20009.

When you get a new specimen, do you put it on exhibit right away? If you do then maybe you should reconsider. Unless you are very familiar with your source you can't possibly know the animal's condition. No animal dealer that we know of routinely performs fecal checks on his animals, and neither do many private collectors. If the animal in question is carrying a virulent parasite or strain of bacteria, then you are endangering other animals in the collection. An epidemic of amoebiasis is easier to avoid through good quarantine than it is to control after it starts to spread.

Quarantine, of one form or another, is an essential ingredient of every well-run herptile collection. The extent of your quarantine procedures will depend, obviously, upon your facilities and inclinations. Quarantine at the National Zoo is fairly simple, but effective. Every new arrival is placed in a room apart from the main collection for at least thirty days. If the animal needs special treatment, the wait time may be longer.

Many animals become dehydrated from an extended shipping period or improper care by dealer. At the NZP these specimens are soaked in water for a day or two. This helps to hydrate the animal as well as to clean from the skin any uric acid and feces that may have accumulated during shipment. Unshed skin is loosened and some mites are also washed off during the soak. Lacerations or other open wounds are treated with a topical antiseptic such as Betadine.

Prophylactic medication is not usually given as a routine procedure. You may think it helps the animal to administer antibiotics for a disease that it might be carrying. In effect, you are increasing the resistance of pathological microorganisms within the animal to the drug. This could be fatal since these organisms would not be affected by medication when the animal really is in need of it. In addition, routine administration of antibiotics in drinking water may upset the balance of gut organisms, killing some that may be keeping possible pathogens in check.

We take routine fecal samples of all quarantine animals. (we have found periodic fecal checks of exhibit animals also to be a good practice.) These are analyzed by our animal health department; your vet should be able to do the same. If a high concentration of endo-parasites exists then appropriate worming medicines are given. However, if the parasite count is low we prefer not to worm the animal. Worming can be a traumatic experience and can do more harm than good. We have lost a few animals such as kingsnakes and leopard geckos as a direct result of worming.

Quarantine is also a very good time for the animal to become acclimated to its new surroundings. This is a time to watch the animal closely for signs of maladaptation. If after a month or more the animal is feeding well, has normal stools, and is in good flesh then it is considered ready to go on exhibit. At this point we feel reasonably assured that the specimen is healthy and doesn't pose a threat to the rest of the collection.

Address all material to R.A.P., Division of Reptiles and Amphibians, National Zoological Park, Washington, D.C. 20009.

Some Changes ---

Chris LaRue, AAZK Vice-President, has resigned from the Board of Directors. He will leave the Topeka Zoo to take a position as General Curator of the Dickerson Park Zoo in Springfield, Mo. Chris will also leave his post as co-editor of Animal Keepers' Forum. His tremendous efforts on the behalf of keeper involvement and professionalism through AAZK and AKF will be sorely missed. We wish Chris and his wife Vicky (a former keeper and AKF staff member) the best of luck for the future.

Rick Steenberg, a former AAZK Executive Secretary, has taken a position at the Sedgwick County Zoological Society's breeding farm near Wichita, Ks. We hope Rick and his wife Judie (a keeper and AKF staff member) will enjoy a prosperous and happy future in their new home.

BACTRIAN CAMEL BIRTH AT METRO TORONTO ZOO by Neville Pike, Metro
Toronto Zoo

On June 5, one of Metro Toronto Zoo's five exhibit female Bactrian camels was observed to have a swelling udder. She remained with our herd of six until August 3 when she was separated to a sheltered area adjacent to the exhibit in preparation for giving birth. The animal had become very vocal on August 2 and continued the same on the 3rd. At 4:41 P.M. that day our female gave birth to a male weighing an estimated 27 kgs. Our records indicate that this was her first pregnancy and the birth went quite normally save for a large amount of blood that covered her hind legs. The afterbirth was discharged at 6:55 P.M. and was removed immediately by the keeper. The newborn stood briefly for the first time at 7:08 P.M. after much struggling and stumbling and continued to stand for brief periods over the following 30 minutes.

August 4 saw the infant looking well and strong; he was observed suckling at 11:00 and 1:00 and appeared to strengthen throughout the day. His mother, however, was becoming increasingly agitated at being separated from the herd.

The following day, the female was very distressed and restless, continually pacing and very vocal. She would not stand for the youngster to suckly and after lengthy observation by keeper and veterinarian, it was decided to partially immobilize the mother in an attempt to obtain milk. We managed to fit a halter onto her and secured ropes to this. The infant had been removed to a nearby indoor holding area. The mother's udder was very full and the nipples appeared red and sore. She did not co-operate and give us any milk and finally complicated matters by sitting down and refusing to move. Warm compresses were then applied to the udder from the rear; again, this met without success. 40 units of Oxytocin were then administered to encourage milk-let-down and a small amount of milk was collected 3 minutes later. The difficulty in obtaining such a small amount of milk was not considered worthwhile so the animal was released from restraint. We had collected only 7 ozs. of mother's milk, and this, mixed with 6 ozs. of evaporated goat's milk, was then bottle-fed to the youngster. This first bottle-feeding was consumed hungrily and he was then released back to his mother. A diet of 50% goat's milk and 50% water was prescribed and 16 ozs. were fed at 6:00 P.M. and

a further 16 ozs. were offered at 7:15 P.M. of which he consumed 7 ozs. It was necessary to separate the young male for feeding as his mother was quite protective.

The mother remained very distressed during the morning of August 6 and it appeared that the youngster would have to be bottle-raised. To the diet the veterinarian added 1 tsp. Ferrous Calcium Phosphate for each feeding and 0.60 cc ABDEC for the evening feed. 16 ozs. of feed were greedily consumed at 7:15 A.M. Shortly after noon the female began to calm down considerably; this was due to the herd showing interest in the new addition which brought them alongside the separation fence. Hay was also fed along the fence to keep the herd in close contact with the mother. The youngster was now suckling frequently but we were unable to determine if he was receiving sufficient sustenance. The mother was given another milk-let-down shot and it was decided to leave the youngster until 7:15 P.M. that evening before bottle-feeding again. At that time he consumed 14 ozs. of the mixture. His feces at this time were red-brown in color, loose and mucous in appearance and foul smelling.

On August 7 our part-time orphan refused his morning feeding and everyone concerned was pleasantly surprised to see him looking strong and alert. His mother was very calm and behaving normally allowing junior to suckle at length. After careful consideration it was decided to suspend bottle-feeding pending future developments.

During the following several days the young male continued his improvement and on August 10 he was seen chewing on a few stalks of hay. Three days later he was observed cribbing on the shelter. His feces remained red-brown and loose. The first several days of his life were warm and sunny with temperatures in the 70-80 degrees F. However on rainy days he showed no preference for the shelter and remained out in the downpour for most of the time. At time of writing he is being introduced to a high protein pellet and his future, after a shaky start, seems bright.

AAZK AWARDS COMMITTEE

Anyone with suggestions or ideas for the AAZK Awards Committee should contact Jeff Roberts, Chairman. Write to: Jeff Roberts, Brookfield Zoo, Brookfield, IL. 60513.

FROM THE COORDINATOR FOR CHAPTER AFFAIRS Denny Grimm, Brookfield Zoo

Congratulations to the Mesker Park AAZK members for recently forming the Mesker Park AAZK Chapter in Evansville, In. The president is William Jeffers and any correspondence regarding the Mesker Park Chapter and its keeper activities should be sent to him.

I'm still seeking info sheets on those chapters who have not answered the survey yet. Pertinent information should include: chapter name, zoo associated with, correct mailing address, number of present AAZK members, names of officers, present activities and projects, and plans for the future. The information should be thorough, but kept to a single page. Send to: Denny Grimm, Brookfield Chapter AAZK, Brookfield Zoo, Brookfield, Il. 60513.

The following is a list of AAZK chapters that responded to the survey as of 8-15-76. I hope this partial list will help establish better communication between chapters and keepers throughout the country.

Brookfield Zoo, President - Jeff Roberts, Chicago Zoological Park (Brookfield Zoo), Brookfield, Il. 60513.

Washington, D.C., President - Elizabeth Frank, National Zoological Park, Washington, D.C. 20009.

Hogle Zoo, President - Rich Hendron, Hogle Zoo, P.O. Box 8475, Salt Lake City, Ut. 84108.

Los Angeles Zoo, President - Mike Dee, Los Angeles Zoo, 5333 Zoo Dr., Los Angeles, Ca. 90027.

Calgary Zoo, President - Ronald Green, Calgary Zoological Park, St. George's Island, Calgary, Alberta, Canada T2G 3H4.

Portland Zoo, President - Roland Smith, Portland Zoo, 4001 S.W. Canyon Rd., Portland, Or. 97221.

Mesker Park Zoo, President - William Jeffers, Bement Ave., Evansville, In. 47712.

SUPPORT YOUR PROFESSION - ASK A FRIEND OR CO-WORKER TO JOIN AAZK.

Send news items and articles for publication in AKF to: AKF EDITOR, 635 GAGE BLVD., TOPEKA, KS. 66606.

OF VETERINARIANS AND KEEPERS by Joseph T. Bielitzki, DVM, MS,
Topeka Zoological Park

Most zoological gardens are faced with a unique predicament.. the genetic base on which breeding programs are founded is quite narrow. Consequently, inbreeding is commonplace in many collections with respect to certain species whose captive numbers are quite reduced.

The coefficient of inbreeding is a standard measure used to indicate just how much inbreeding has taken place in a given animal. It is usually represented as a decimal which reflects the percentage of inbreeding when multiplied by 100. The formula $F_x = \sum \left[\left(\frac{1}{2} \right)^{n+n_1+1} (1+F_a) \right]$ at first appears quite complex, but is extremely simple, since F_a , the inbreeding coefficient of a common ancestor, is usually known. In the formula, F_x is the inbreeding coefficient for the animal in question, n is the number of generations from the sire to the common ancestor, and n_1 represents the same for the dam. The summation symbol indicates that all ancestors must be considered since more than one common ancestor may contribute to the degree of inbreeding. Since the sire and the dam each contribute equally to the offspring's genetic patterns, the $\frac{1}{2}$ is used in the equation.¹

This formula should indicate that the lower the inbreeding coefficient the better. This is based on the fact that, the distance between the sire or dam and a common ancestor is represented exponentially rather than arithmetically in the equation. This then is the aim of selective matings... to move common ancestors further back in the pedigree. This can be accomplished only by increasing the numbers of animals from which to choose and by careful pedigree evaluation.

The inbreeding coefficient is used most frequently in species whose numbers border on extinction, for example, the Przewalski's horse. In order to minimize inbreeding in this species, every living specimen has had an inbreeding coefficient calculated for it. These are kept on file by Jan Bouman in Rotterdam. By using the "Bouman Pedigree System", the inbreeding coefficient can be predicted for any offspring from any possible cross of this species. Hopefully, this will minimize the possibility of genetic defects due to excessive inbreeding and aid in expanding the genetic base of the species.

The Przewalski horse's ancestry can be traced back to 13 individuals. Obviously, an entire species founded on 13 animals could be doomed if careful genetic management were not employed. The "Bouman Pedigree System" also offers a summary of each animal's blood composition. This indicates what percentage of genetic material came from each of the 13 common ancestors to make up an individual's genotype. Again, this offers another method for the evaluation of a possible breeding.

Frequently, inbreeding is the only direction one can follow with a given species, but it does not necessarily indicate the downfall of a species. The Przewalski horse is the living proof. Since 1968, the average inbreeding coefficient has been progressively reduced. In 1968, it was .291, as of this year it is .231. This reduction is due to selective matings resulting in many crosses where the inbreeding coefficient is 0.000. While the inbreeding coefficient of a living animal cannot be reduced, those of future animals can be steadily reduced, thus increasing the genetic variability of the species.

1. Wright, S. (1923). Mendelian Analysis of the Pure Breeds of Livestock J. Hered. 14: 339-348.

WILL IT BE CONDORS OR PHOSPHATE OR BOTH? Outdoor News Bulletin

A proposed phosphate mine in the Los Padres National Forest of California has created a dispute that highlights the inattention of government to the nation's wildlife resources, the Wildlife Management Institute reports.

In 1969, U.S. Gypsum applied for a phosphate mining lease in the forest. The plan is to open six pit mines totaling 490 acres and ranging from 200 to 900 feet deep. The mines would be dug in an area now occupied by the last 60 California condors in existence. The public became concerned and aroused.

Because no one really knows how the mines would effect the condor, the lease probably will be granted. Few people relate this type situation to conservationists' often futile pleas for support for wildlife management and research programs. They only remember to complain when the information needed is not immediately at hand. Seven years and still no relatively sure answer doesn't speak loftily of either wildlife management or the priority it is given.

We have received many requests for a list of those who attended the
1976 National Conference in San Diego...so here goes!

Red Thomas, San Diego	Harold Crooks, Evansville, In.
Carol Thomas, San Diego	Emily Bartholomew, Caster Valley, Ca
Rose M. Henneous, Portland	Ed Ramsay, San Jose
Earl Donnell, Abilene	Kathy Clark, San Jose
Hugh Watson, Abilene	Karen Grikstas, Buffalo, N.Y.
Roger Henneous, Portland	Alan Sharples, Atlanta
George Montgomery, Colorado Sprgs	George Lewis, Kings Dominion, Va.
Bill Coburn, Las Vegas	Sue Ellis, San Diego
Pamela Dietz, Las Vegas	Barbara Normington, San Diego
Carolyn Emerick, Washington, D.C.	Mike Phillips, San Diego
Diane Fusco, Syracuse	Brian Joseph, San Diego
Debbie Ziegler, Syracuse	Sharon Joseph, San Diego
Jay Terkel, Springfield, Ill.	Mary Swanson, Fresno
Janet Phipps, Baltimore	Arvey Swanson, Fresno
Jill Grade, Los Angeles	Linda Turner, Oklahoma City
Jerry Bunnell, Bell, Ca.	Paul Ruble, San Diego
Jeff Roberts, Chicago	Ann Littlewood, Portland
Dennis Grimm, Chicago	Mike Keele, Portland
Pat Sass, Chicago	Terry Thompson, Portland
Gay Kuester, Chicago	Tom Goldsberry, Portland
Grace Likens, Chicago	Jonolyn Wilson, Portland
Mike Dee, Los Angeles	Janie Winicke, Portland
Claudia Collier, Los Angeles	Chris LaRue, Topeka
Jody Crawley, Los Angeles	Vicky LaRue, Topeka
Eugene Maliniak, Washington, D.C.	Alan Hamilton, Las Vegas
Mike Yelverton, Baton Rouge	Garth Courtney, Las Vegas
Larry Sammarco, Chicago	Ed Roberts, Boston
Pat Sammarco, Chicago	Virginia Roberts, Boston
Bela Demeter, Washington D.C.	JoAnne Thomas, San Diego
Ed Schulze, West Allis, Wisc.	Boo Shaw, San Diego
Nora Schulze, West Allis, Wisc.	Phil Prewett, Memphis
Jerry Houghlan, ZuPreem, Topeka, Ks	
Dewey Garvey, Central Nebraska Pack	
Kent Benedict, Atlanta	
Arthur Cooper, Washington, D.C.	
Pete Momson, Milwaukee	
Donald Anderson, Memphis	
Joyce Palmer, Salt Lake City	That's 71 persons that were there.
Elizabeth Choules, Salt Lake City	
Steve Conger, Evansville, In.	WHEW!



BEAR IN MIND!

Please remember that November is the month to send in your AAZK membership renewals. There are two important changes this year you should be aware of. First, any membership not renewed by Dec. 31 will be dropped from the rolls and that individual will not receive a January AKF. Secondly, there will be no subscription rate for 1977. AKF will only be available to AAZK members.

When sending in a renewal, please indicate you are renewing so your check will not be processed as a new membership. Send to: AAZK HQ, NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C. 20009.

SIBERIAN TIGERS SUCCESSFULLY BREED AT BEARDSLEY ZOOLOGICAL GARDENS

b̄y Tony Marchlinski, Beardsley Zoo, Bridgeport, Conn.

Two Siberian Tiger cubs (*Panthera tigris*) were born at Beardsley Zoo on August 26, 1976. The cubs, a male and female were born at 8:35 AM. They were left with the mother, and seemed to be accepted by her without any signs of rejection. At about noon it was discovered that the mother had rolled onto the male cub. By the time it was retrieved it had died. The female cub was removed from the exhibit, and is being hand reared. At this writing the youngster appears to be doing fine.

The six year old male, and the three year old female parents arrived at Beardsley Zoo in December of 1975. The male came from Miller Park Zoo, in Bloomington, Ill., and the female from the Indianapolis Zoo. This was her first litter. The male had been a proven breeder, having sired several litters at Bloomington. The male presently weighs about 475 pounds and the female about 400. They are housed in the large bird and mammal building at the zoo, but will soon be in a new outdoor exhibit. The new habitat will be about 2400 square feet in exhibit area, plus a three room holding area, which consists of two bedrooms and a cubbing den. The building area will be about 22'x41'4"

We are now very hopeful that we will be successful at breeding these beautiful cats and other endangered species at Beardsley Zoo.

PREFERENCE BALLOT:

This survey is to determine the majority opinion on conference scheduling. At the 1976 National Conference in San Diego it was voted to not hold conferences in the summer. After much discussion there was no clear agreement on which would be best, spring or fall. It was decided a poll should be conducted to determine the members' feelings. Please check one: ☐ Spring ☐ Fall Comments: _____

send to: AAZK HQ, National Zoological Park, Washington, D.C. 20009.
Thank you for your participation. AAZK BOARD OF DIRECTORS.

AMERICAN ASSOCIATION
OF ZOO KEEPERS
National Zoological Park
Washington, D.C. 20009



FIRST CLASS

Mary Cahill, Lib,
Nat Zoological Park
Washington
D.C.

20009



ANIMAL KEEPERS' FORUM



Second Anniversary

DEDICATED TO PROFESSIONAL ANIMAL CARE



VOLUME III NUMBER 11

NOVEMBER 1976



ANIMAL KEEPERS' FORUM

Edited by Ron Kaufman

Topeka Zoological Park, 635 Gage Blvd.
Topeka, Kansas 66606 USA

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AAZK MEMBERSHIP INFORMATION

AFFILIATE (KEEPERS), ASSOCIATE.....	\$10.00 ANNUALLY
FOREIGN.....	\$15.00 ANNUALLY
STUDENT.....	\$ 5.00 ANNUALLY
CONTRIBUTING (ORGANIZATIONS).....	\$25.00 ANNUALLY

MAKE CHECKS PAYABLE TO: AMERICAN ASSOCIATION OF ZOO KEEPERS.

AAZK MEMBERSHIP INCLUDES SUBSCRIPTION TO THE MONTHLY NEWSLETTER, ANIMAL KEEPERS' FORUM AND THE ANNUAL PUBLICATION, THE KEEPER: JOURNAL OF THE AMERICAN ASSOCIATION OF ZOO KEEPERS. ALL MEMBERS RECEIVE AN AAZK SHOULDER PATCH AND A MEMBERSHIP CARD GOOD FOR FREE ADMISSION TO MANY ZOOS AND AQUARIUMS IN THE U.S. AND CANADA.

SEND NAME AND ADDRESS AND CHECK OR MONEY ORDER TO: AAZK HQ,
NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C. 20009.

DEADLINE FOR EACH EDITION OF AKF IS THE 20th OF THE PRECEDING MONTH.

ANIMAL KEEPERS' FORUM and YOU... OUR SECOND ANNIVERSARY

This is our second anniversary issue. Traditionally, such occasions are a time for reflection and consideration of the things to come. So it shall be for AKF, too. In the following editorial, we look back and we look ahead and we also reaffirm our commitment to you, the career, professional animal keeper.

Animal Keepers' Forum was a brainchild born to six people in October, two years ago. It was conceived from the seeds of several ideas and occurrences. One was the distressing lack of communication-the exchange of ideas and knowledge-that hounded the zoo profession. Another was the desire to stimulate animal keepers into developing their skills into a profession. Yet another was to bring some logic, some order into this tremendously complex field. Too, it was about that time that many concerned keepers were sensing a downhill slide in the movement of the American Association of Zoo Keepers. A truly future goal of the young publication was to help boost the AAZK into a position of stability and upward movement. That is the foundation on which AKF was developed.

Animal Keepers' Forum was born just one month later. Original artwork by Perry LaBelle provided the initial face for AKF...the familiar hand gently supporting a female zebra and her foal. The Steenbergs-Rick and Judie-and the fine people at the Minnesota Zoological Society gave the substance to AKF. Their fine job of typing, printing and mailing involved many persons. That first issue began with an editorial by Dave Ruhter and included an article by Jim Fouts. Volume One Number One contained a mere 3½ pages of readable material. Two months later, AKF expanded to six pages, then to nine, then to thirteen. The original young AKF was an independent publication edited by Ron Kaufman, Chris LaRue and Dave Ruhter. At the beginning of the next year, 1975, AKF offered to become the official vehicle of communication for the American Association of Zoo Keepers. In March, 1975, AAZK accepted the offer and AKF began to realize some of its goals...foster communication and help boost AAZK. AKF continued to grow-as did AAZK-and the familiar booklet format was adopted in January, 1976. Our first anniversary issue was a big one...thirteen pages packed to the hilt with news and articles. November, 1975 also saw a new project brewing-the American zoo field's first technical journal. It was compiled and edited by the AKF editors and comprised nearly 30 pages of top-quality

information. That publication...The Keeper, Journal of the American Association of Zoo Keepers...added fuel to the fire that flared in 1976.

And what a fire it was. Under the dynamic leadership of Rick Steenberg and Bela Demeter, Animal Keepers' Forum and the American Association of Zoo Keepers began to sweep the zoo field. AKF subsequently moved very close to a total merger with the AAZK. The fire burns today. For all practical purposes, AKF has merged with AAZK. The names of these two growing giants is spreading far and wide. AKF/AAZK travels to many European countries and to South America and Australia. The pot is brewing at home, too. The list of persons receiving AKF is expected to double in the next year. Soon, all keepers...indeed, all zoo professionals...will be touched by the programs of AAZK/AKF.

But what of AKF's progenitors, the idealists who first sparked the babe? The changes are many. One of AKF's original editors, Dave Ruhter has left the profession to continue his work on a master's degree. Rick and Judie Steenberg first worked in St. Paul, then moved to Topeka and have now gone to the Sedgewick County Zoo at Wichita, Kansas. Chris and Vicky LaRue have moved to Springfield, Missouri where Chris is now the general curator. And Ron Kaufman...well, he's penning this editorial.

The future of AKF/AAZK is remarkably bright. AKF can only improve and AAZK can only go farther. With the projected doubling of members the quality of AKF will increase. But the amount of work will be tremendous...not only for the AKF editor or the AAZK Board of Directors but also for you and your colleagues. As the zoo keeping profession develops you must work to get your ideas, techniques or procedures out of the dark hole of non-communication. What a tremendously creative endeavor is animal keeping and what a far-reaching responsibility it is! CARING FOR LIFE ENOUGH TO SHARE YOUR CONCERN AND KNOWLEDGE WITH OTHERS IS A WONDERFUL TRAIT. CARE ENOUGH TO SHARE YOUR IDEAS AND KNOWLEDGE WITH YOUR COLLEAGUES...THROUGH THE PAGES OF ANIMAL KEEPERS' FORUM AND BY SUPPORTING THE AMERICAN ASSOCIATION OF ZOO KEEPERS.

Ron Kaufman

Ron Kaufman, editor



National Headquarters
National Zoological Park
Washington, D.C. 20009

FROM THE PRESIDENT

Bela J. Demeter

Bela Demeter

With the exception of the Canadian Provinces, our Regional Coordinator network is in effect. These coordinators have been placed to better aid us in reaching our constituency. Use your coordinators, they are there to help you and would likewise appreciate any help you can give them. If you have any questions or ideas for AAZK, write your coordinator. Give him or her a chance to know you better. The more contact you have with your coordinator the better our organization will reflect the thoughts of all of us. The more questions the coordinators can help you with, the more time there is for us at headquarters to work on other projects to improve our services to you. And the more people there are involved, the better we represent all keepers.

Initially, the coordinators will be working on distributing brochures to prospective members. We hope we will be able to reach almost all the animal-care people in the country this way before the end of the year. Later the coordinators will be working on setting up regional conferences and workshops in their regions or with other regions. We hope to make this network work, and it will work with your participation. Be sure to write your coordinator if you would like to help in a section of the region. Try to visit your coordinator if you are in the area; that's what they are there for, personal communication.

Tom Goldsberry	WA, OR, ID, MT, WY	Portland
Carole Udell	CA, AZ, NV, CO, UT, NM, HA	Los Angeles
Larry Sammarco	WI, IL, IA, MN, ND, SD	Lincoln Park
Nancy Chase	OK, NE, KA, MO, TX	Oklahoma City
Randy McGill	MI, OH, IN	Detroit
Michael Yelverton	LA, MS, AR	Baton Rouge
Richard Sheldon	TN, KY, NC, VA, WV	Knoxville
Marilee Vandiver	FL, AL, GA, SC	Santa Fe Teaching Zoo
Janet Phipps	MD, NJ, CT, PA, DE	Baltimore
Bernard Feldman	NY, VT, NH, MA, RI, ME	Buffalo

A COPY OF A LETTER FROM JILL GRADE TO AAZK BOARD OF DIRECTORS
AND TO THE GENERAL MEMBERSHIP

To Whom It May Concern:

I am very nearly without words to express the emotional uplift felt by myself (and by many of my colleagues, I'm sure) after attending the AAZK Conference in San Diego.

I have been caring for a diverse variety of animals for almost six years now. But I find that a great deal of that time has been spent in attempting to make myself heard on the managerial levels of the institutions for which I have worked, trying to make it understood that daily contact with an animal can be an important insight into their behavior...insight often more valuable than the information (if any) available in books, or the sometimes outdated opinions of my predecessors...a lesson in futility. As per that old saying "Misery loves company", I was pleased to discover that most animal keepers (as represented in San Diego) work under similar circumstances; I was also saddened...angered... that the ignorance of the valuable contributions made by keepers to the zoo field is so widespread. Phrases such as "Why bother, they won't listen to a peon like me!", "I told them two weeks ago that it would die without medication.", "What am I here for?" and "What are they here for?" echoed throughout the conference rooms all week long.

Finally, realizing that, as an individual, "fighting the brass" is as productive as 1.0 Indian Rhino in the United States and 0.1 Indian Rhino in India, I am convinced that the fellowship available through the American Association of Zoo Keepers is an invaluable resource which should be cultivated to the utmost. AAZK, I feel, has the potential to obtain the much needed recognition for animal keepers, nationally, if not internationally...not by means of radical "keepers lib" upheavals but by means of mutual efforts to promote professionalism...to educate animal care personnel; not only in the technical aspects of zoo keeping but in the purposes behind what we do, the reasons for which we daily "break our backs", "sweat blood", and "keep on truckin'".

In closing, I simply wish to aver the pulling together of the organization...the giving of the opportunity to unite, to pool our resources, in a vital, productive association of people "dedicated to professional animal care", conservation and preservation.

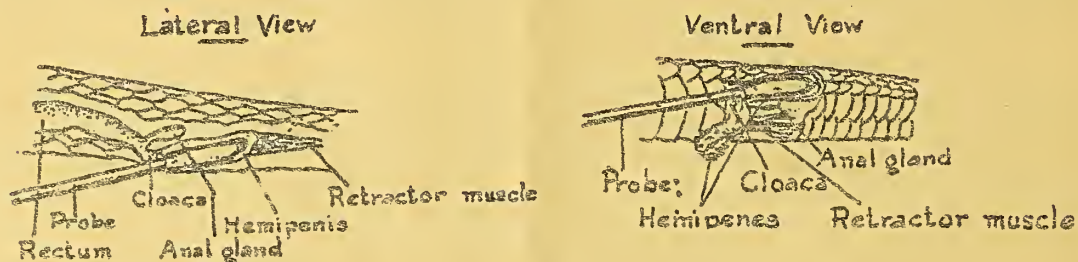
Kent Benedict, our correspondent from Atlanta, sent us this article by R. Howard Hunt and Denton Bragg which was published in the April 1975 issue of Herptile Herald, now the Bulletin of the Georgia Herpetological Society. This piece is so good we decided to print it in its entirety. It's called "Sex Determination in Snakes".

Herpeculturists should give their captive reptiles and amphibians all the care necessary to insure good health and induce breeding. In any reproductive effort the most important thing to possess is at least one member each of the opposite sex. With some practice, the enlightened herpeculturist can determine the sex on most adult reptiles and amphibians. Most male chelonians have long tails and modified shells. Many lizards such as the green iguana and the fence swift exhibit sexual dimorphism. Male frogs and toads frequently have enlarged or modified front legs for clasping the female. Snakes and crocodilians exhibit no overt sexual dimorphism and the herpeculturist must examine the genitalia within the cloaca for sex identification.

For positive sex identification in snakes, a probe is used. When retracted the two hemipenes of the male snake lie in the front part of the tail behind the cloaca. The anal glands lie above the hemipenis. When a propulsor muscle contracts, the blood engorged hemipenis is squeezed inside out like the finger of a glove, producing an erection. When the hemipenis is in the retracted state a probe can be inserted into the hollow formed for an appreciable distance. If the snake is a female, the probe can go into the anal gland a short distance. The difference in probing depth between male and female snakes of equal length is so great that mistakes in sexing are infrequent. This technique does not work well on lizards because of the short probing distance into the retracted hemipenis.

Selecting the correct probe to use is important. Fuhrman Diversified, 1212 W. Flamingo, Seabrook, TX 77586, manufactures a set of metal sexing probes for \$65.00. A box of rolled paper cotton swabs makes a good cheap substitute. Do not use wood or plastic swabs. The probe should be much smaller in diameter than the estimated diameter of the hemipenis. For larger snakes the entire end of the swab including the cotton can be used. For small snakes, such as young colubrids, the rolled paper end of the swab is shaved off with a razor blade to the appropriate dia-

meter. The selected probe is lubricated with saliva and gently pushed at several different points in the posterior lateral area of the cloaca, where the hemipenis should be. After a period of practice on several large, hardy specimens this technique is very accurate and will not damage the hemipenis if care is used.



THANKS AND A KISS...

to all who have helped make AKF/AAZK a vital team... to Jane Kaufman, a zoo wife beyond compare, to outgoing staff members Judie Steenberg, Chris and Vicky LaRue, to Jerry Houghlan and all the folks at ZuPreem for valuable moral support and the use of their computer, to the Topeka Friends of the Zoo—they trully are that, and to the staff of the Topeka Zoo for tremendous help with the dirty work and for the use of valuable office space. Especially warm thanks to former AAZK Exec. Sec. Rick Steenberg and to current AAZK President Bela Demeter. A big hug goes to all of AKF's feature contributors and to all of our friends and colleagues who have given precious time and support.

REGRETS

We regret that the results of the animal keeper survey being compiled by Judie Steenberg do not appear in this issue of Animal Keepers' Forum. Time has put the crunch on Judie since the Steenbergs are in the process of moving. Look for the survey data in the December issue of AKF.

A discussion on sex must begin someplace, and what better place than with stage one of the male sexual act, erection. Erection is a series of physiological events by which the penis is extended from the prepuce or sheath and increases in size and rigidity to allow effective penetration into the vagina. For a successful copulation to occur, erection must be maintained throughout coitus.

The central nervous system is primarily responsible for perceiving the outside world and integrating this information to coordinate bodily functions. Sexual arousal, therefore, is a function of the higher information centers...the brain. The presence of an estrus female is usually sufficient stimulation to cause erection; the brain has somehow informed the body that the reason is there and now to prepare to satisfy the urge.

The autonomic nervous system, made up of the parasympathetic nervous system and the sympathetic nervous system regulates the schedule of events which occur during coitus. This is important because the events related to reproduction require timing, coordination, and consistency and, if controlled by a voluntary system, would probably be inefficient.

The penis has two or three cavernous bodies which when filled with blood cause the penis to increase in size and rigidity. Erection is caused by the dilation of the arteries, carrying blood to the penis, under parasympathetic control. Blood leaves the penis at a constant rate whether or not the arteries are dilated; this results in a local increase in blood pressure causing the corpora cavernosa to fill with blood and increase in size. As this is happening, the retractor penis muscle relaxes allowing the penis to extend from the prepuce. To guarantee sufficient rigidity to the penis, the ischio cavernosus muscle, which attaches to the root of the penis, contracts pulling the penis against the brim of the pelvis, compressing the veins of the penis. This results in a further increase in blood pressure and a simultaneous increase in rigidity.

As an additional aid to penetration, a number of species have a bony structure surrounding the urethra in the penis, the os penis or baculum. The baculum varies in size from less than one centimeter in some rodents to about sixty-five centimeters in the walrus. The os penis assists in penetration in those species where the amount of erectile tissue in the penis alone could not guarantee intromission.

Reproductive success is essential to the successful continuation of a species. Adaptation and evolution have produced a number of systems of different designs, but amazingly similar in function and response. In all mammalian species, the erection starts a series of events which can be joyous or annoying, depending on the outcome.

TOO FEW AND FAR BETWEEN DEPARTMENT... BIRTHS AND HATCHINGS

The San Diego Wild Animal Park announces the birth on October 15 of a female black rhinoceros. The baby, named Nanyuki, is the first of her species ever born in the collection of the Zoological Society of San Diego. Her birthweight was estimated at 27.3 kg. (60 lbs.). The Wild Animal Park also reports the rare birth of an Indian rhino on October 18. The male Indian rhino named Maharaja is believed to be the first surviving second-generation of its species ever born in captivity in North America. His weight at birth was estimated at 36.3 kg. (80 lbs.). His parents are Jaypuri and Lasai, both born in captivity. Jaypuri gave birth once before on March 24, 1975, but the young male died the following day of undetermined causes. Both youngsters are being cared for by their mothers and have been observed nursing and surveying their environment.

The Topeka Zoological Park announces the natural hatching of the green iguana. The event took place in the Tropical Rain Forest exhibit. Four young of undetermined sex survived to be captured and placed in a rearing area. The nest site has not been found. Another nest site that was being monitored contained 26 fertile eggs that never hatched. Incubation period is believed to be somewhat over 140 days. The ground temperature at the nest site probably varied between 70 and 100 degrees. The soil was composed of good garden loam and hard packed clay. Hatching date was sometime in late September. The zoo also announces the birth of second-generation yellow anacondas on the 17th. of October. Ten out of twelve hatchlings have survived. The two non-survivors drowned and one unhatched egg was recovered.

BROOKFIELD KEEPER INVOLVED IN RAPTOR REHABILITATION

In a wooded part of the Brookfield Zoo sits a 10X20 foot hut where a Brookfield keeper spends his spare time rehabilitating birds of prey. Joe Zawadowski, 27, of Brookfield, has been aiding injured hawks and falcons for two years.

The main work often entails repairing individual feathers, an intricate process in which Joe inserts a toothpick-size bamboo pin into the hollow part of the broken feather and glues to it another feather. The bird can fly with this feather until it molts an new one.

Joe then teaches the bird the routine of falconry. As the raptor's time in the air increases, Joe begins to watch for its resumption of wild behavior. Signs of this culminate with the hunt, when the raptor successfully pursues and captures its prey.

"I saw the need for this in 1974. We were getting a lot of calls at the zoo asking us to take birds that were injured or too young to make it in the wild." Joe was granted permission to work with raptors under a special permit which authorizes Brookfield Zoo to salvage federally protected birds.

The keeper is pleased with the results of his project, which has aided 67 raptors. He would like to develop it by introducing methods that involve less human contact for the raptor.

"Less dependence on men is this rehabilitation stage," said Joe, "will enable me to work with more birds and give the raptors a better chance of surviving in the wild."

DON'T FORGET TO RENEW YOUR MEMBERSHIP IN THE AMERICAN ASSOCIATION OF ZOO KEEPERS...IF YOUR RENEWAL HASN'T BEEN RECEIVED BY DECEMBER 31st, YOUR NAME WILL BE DROPPED FROM THE ROLLS AND YOU WILL NOT RECEIVE THE JANUARY, 1977 ISSUE OF ANIMAL KEEPERS' FORUM. RENEW NOW!!!

ARABIAN ORYX AT THE SAN DIEGO WILD ANIMAL PARK

The Arabian oryx is steadily increasing in numbers at the San Diego Wild Animal Park.

On October 22, eight of the antelope were released at the Park following their arrival from the Phoenix Zoo. The new oryx...four males and four females...join a herd of 15 of the animals already in residence at the wildlife preserve.

Once ranging over most of the Arabian Peninsula, the oryx now is considered extinct in the wild and exists only in a few breeding stations in the world...the Wild Animal Park, the Phoenix Zoo, the Gladys Porter Zoo in Brownsville...all members of the World Herd. (Some of the oryx are also believed to be held in captivity by private owners in the Mideast).

The World Herd was established in 1963 to assure the Arabian oryx' survival. Founders of the World Herd include the Fauna Preservation Society, the World Wildlife Fund, the Shikar-Safari Club and the Zoological Societies of London and Arizona. The Los Angeles Zoo also maintains a herd and works in cooperation with the World Herd, but is not a member.

In 1963, Maurice Machris, a former president of the Shikar-Safari Club arranged for a nucleus herd of Arabian oryx (nine animals) to be brought to the Phoenix Zoo. In 1972, the Zoological Society of San Diego joined the World Herd and Machris arranged for four male and four female oryx to be transferred to the Wild Animal Park to form a second breeding station.

Since then, 12 offspring have been born at the Park. The latest, a female, was born on October 19.

HELP SPREAD THE AKF/AAZK TEAM AROUND...
SHOW YOUR COPY OF AKF TO A FRIEND AND
URGE THAT PERSON TO JOIN AAZK...

CALIFORNIA FALCON PROGRAM SUCCESSFUL Outdoor News Bulletin

For the first time in California, young prairie falcons bred in captivity have been introduced successfully into the wild, the Wildlife Management Institute reports. The breakthrough occurred last year when Gary Beeman, a falconer operating under a permit from the state, produced 10 young prairie falcons. This year 12 young were raised and two were placed in a nest of wild prairie falcons in northern California. They were adopted and fed by their foster parents and are now foraging for themselves.

Beeman noted that even under the best of conditions a pair of prairie falcons in the wild would require a minimum of eight years to produce 22 young, the number brought off in two years.

Techniques used in Beeman's captive raptor breeding program will be used to supplement wild populations of the endangered peregrine falcon in California.

CAREERS CAREERS CAREERS

career: REPTILE KEEPER
San Diego Zoo

practical experience in reptile/
amphibian management: university
training in herpetology/ biological
science: useful auxiliary skills
(writing, fiberglass casting, art,
photography) immediate opening,
starting salary \$725/month...
excellent fringe benefits. Mail
resume to: Personnel Dept.,
San Diego Zoo, Box 551, San Diego,
California 92112.

KEEPER POSITIONS OPEN

Asheville Nature Center

salary: \$2.80/hr. or
\$2.86/hr., after train-
ing.

Contact: Dr. Richard
W. Burton, Curator,
Asheville Nature Ctr.,
Cashes Creek Rd.,
Asheville, N.C. 28805

LEGISLATION by Tom Goldsberry, Portland Zoo, Portland, Oregon

Keepers can breathe a bit easier, at least for this year. The famous Dingell bills, HR70 and HR 6631, which would require all keepers to be licensed and subject to a stiff fee, have not received hearings from the Congressional Subcommittee to which they have been referred.

A recent issue of the ZooAct Bulletin states, "While it is too early to say that they are definitely dead, it must be assumed that their chance of passage are greatly diminished as Congress races to enact more urgent legislation before the probable November adjournment."

AKF FINANCIAL STATEMENT for the quarter ending 30 Sept., 1976

Cash on hand, 30 June 1976.....	\$873.00
AAZK Journal sales.....	66.00
AKF T-shirts.....	195.00
Memberships.....	195.00
Postage.....	\$251.73
Office supplies.....	41.25
Printing.....	88.15
T-shirts.....	163.48
Phone.....	3.08
Pro-rated refund.....	2.50
Maintenance contract.....	93.15
Petty cash.....	5.00
	<hr/>
	648.34
	<hr/>
	1329.03

Cash on hand, 30 Sept., 1976.....	\$680.69
Accounts receivable.....	56.57



BEAR IN MIND!

Please remember that November is the month to send in your AAZK membership renewals. There are two important changes this year you should be aware of. First, any membership not renewed by Dec. 31 will be dropped from the rolls and that individual will not receive a January AKF. Secondly, there will be no subscription rate for 1977. AKF will only be available to AAZK members.

When sending in a renewal, please indicate you are renewing so your check will not be processed as a new membership. Send to: AAZK HQ, NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C. 20009.

**AMERICAN ASSOCIATION
OF ZOO KEEPERS**
National Zoological Park
Washington, D.C. 20009



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ANIMAL KEEPERS' FORUM



DEDICATED TO PROFESSIONAL ANIMAL CARE

VOLUME III NUMBER 12

DECEMBER 1976



ANIMAL KEEPERS' FORUM

Edited by Ron Kaufman
Topeka Zoological Park, 635 Gage Blvd.
Topeka, Kansas 66606 USA

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AAZK MEMBERSHIP INFORMATION

AFFILIATE (KEEPERS), ASSOCIATE.....	\$10.00 ANNUALLY
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CONTRIBUTING (ORGANIZATIONS).....	\$25.00 ANNUALLY

MAKE CHECKS PAYABLE TO: AMERICAN ASSOCIATION OF ZOO KEEPERS.

AAZK MEMBERSHIP INCLUDES SUBSCRIPTION TO THE MONTHLY NEWSLETTER, ANIMAL KEEPERS' FORUM AND THE ANNUAL PUBLICATION, THE KEEPER: JOURNAL OF THE AMERICAN ASSOCIATION OF ZOO KEEPERS. ALL MEMBERS RECEIVE AN AAZK SHOULDER PATCH AND A MEMBERSHIP CARD GOOD FOR FREE ADMISSION TO MANY ZOOS AND AQUARIUMS IN THE U.S. AND CANADA.

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DEADLINE FOR EACH EDITION OF AKF IS THE 20th OF THE PRECEDING MONTH.

After reading the two fine reviews of this book in previous issues of AKF, I would like to add a few comments.

Perhaps the gentlest thing that can be said about this 246 page book is that it is not 247 pages. Although Living Trophies contains much valid criticism regarding present-day animal care and husbandry, many of these points are skilfully sandwiched between sentences or paragraphs of a more sensational nature, thus providing a smokescreen of validity for all of the material. Therefore, by the time the reader has reached the otherwise good observations in Part Three, he has been subjected to such a shotgun blast of half-truths, falsehoods, snide remarks and innuendoes, that all sense of objectivity has been left far behind. Of course there are bad zoos in this country; there are also bad supermarkets, drugstores, massage parlors and eye clinics. The point is, however, that when you select a negative zero base, your final result will be negative.

The propaganda begins on the dust jacket where the blurb informs us that this book is a "Shocking Look at the Conditions in America's Zoos" ...not a few zoos...all zoos. This statement is accompanied by a picture of a tiger behind bars wearing a very typical tiger look: typical, that is, if you're a zoo person. If you are an average zoo-goer this picture will trigger a sympathetic reaction, which is exactly as the authors intended.

On the inside of the dust jacket we are told Peter Batten is "One of the foremost humanitarian activists in the country". This humble pronouncement is compounded by a statement on page three "That numerous self-acclaimed wildlife experts, who appear to recognize opportunity's knock, are exploiting the animals' plight to personal advantage". This is one of the oldest psychological ploys known: disavow an action or situation, assume a "who, me?" profile, then promptly embark on the same self-promoting course.

Even the logistics supporting the research supposedly done on the book is questionable. Batten claims he and a Deborah Stancil, a defrocked keeper cum notebook, cavorted 22,000 miles in four months gathering

material. There are notes on 104 zoos they claimed to have visited. This evens out to twenty-six zoos a month; a little over six a week, and more than one a day. Assuming Batten and friend eat, sleep, and drive in the same manner as the rest of us mortals, this would seem to confirm that many (if not all) zoos received, at best, only a cursory glance. Back to the negative zero base again.

Even allowing for the pre-Peter Rabbit syyle in which this book is written, many statements in Living Trophies show an appalling lack of basic zoological fundamentals. When the dynamic duo breathlessly tell of a gorilla in a cage "further concealed by a glass partition" or, a TV news report of a giraffe birth "unconsciously revealing the asphalt surface to which the baby fell", they display a singular lack of basic primate hygiene and fundamental giraffe husbandry. Unfortunately, the layman (for whose pocketbook this book is obviously intended) who reads this kind of cheap sensationalism, will probably not know that glass partitions are routinely used in primate enclosures to prevent the spread of disease; nor, will he stop to consider that the hard, sun-baked savannah habitat of the giraffe is just as hard as the concrete floor of a zoo. Furthermore, will the layman realize that the initial jolt the giraffe foal receives is necessary to stimulate respiration and circulation? I doubt it.

Another statement that spotlights the shoot-from-the-hip zoology of Batten and friend is, "Giant pandas are rare in their native Szechuan province". This is pure conjecture. Not only is the panda not rare in Szechuan province, it is not even confined to Szechuan province. The panda's range extends for some 800 miles from Tsinghai province south into northern Yunnan province. The total area of the present habitat may therefore cover some 400,000 miles. Their range and numbers have been estimated anywhere from one animal per square kilometer to one animal to one main valley. It is the Chinese embargo on these animals, their inaccessible habitat, plus the fact they have never bred in a Western zoo that makes them rare at all.

Batten and friend, who profess to be so vitally concerned with anthropomorphism and lack of ethics, would do well to check two asinine statements on page 54. One statement reads...are you ready for this... "The typical orangutan family rivals the Waltons in integrity, honesty, humor and earthiness...". A statement such as this reveals not only maudlin anthropomorphism in the highest sense, but borders on mental retardation.

Their lack of ethics is exposed twenty-one words later when they state unequivocally, "This remarkable ape (orangutan) has escaped serious study to date". I wonder what Batten and what's-her-name were doing when John MacKinnon was gathering his extensive material for In Search of the Red Ape. If the Living Trophies authors did not choose to acknowledge the brilliant work of this dedicated zoologist, they might have referred to the eighteen years of field study of Barbara Harrisson, who is begrudgingly mentioned on page 20 IN THEIR OWN BOOK!

Keepers, as might be expected in a publication of this kind, also share an ambiguous examination. An occasional bone is tossed to a keeper who has cooperated fully in the research. More often than not we are treated to some snide remark such as, "All zookeepers had left the zoo right on time, leaving visitors inside" (page 113). If the authors had wished to be truly objective they would have mentioned a few of the many instances in which keepers have stayed on their own time, or come in on their days off to care for an ailing animal, without double-time - and- a -half as an apprentice pipe fitter or a sewer worker would receive.

No zoo sign or brochure is too obscure to avoid the scrutiny of the authors. In several instances our attention is diverted to a misspelled word or sign at some zoo. This being the case, someone other than the authors must have edited Living Trophies or they would have certainly corrected the nine typographical errors I found without much effort.

And on it goes. There certainly is a need for an objective book on the problems of today's zoos, but, Living Trophies isn't it. Perhaps a suitable sequel to Living Trophies would be a biography of Batten and friend...and entitled Living Atrophies.

DON'T FORGET...THIS COULD BE YOUR LAST ANIMAL KEEPERS' FORUM!!!

If you haven't sent in your renewal, do so now! December 31 is the deadline...beyond that, your name will be dropped from the rolls. See the membership information on the inside front cover for more details. And, while you're at it, why not get a friend to join?

The single most important event during the copulatory act must be ejaculation...the actual introduction of sperm into the entrance of the female reproductive tract. Quite frequently, an animal is seen to mount and intromission occurs, but this in no way insures that ejaculation has occurred. For that matter, many species will show repeated mountings by the male with ejaculation only occurring once during the mating.

The stimulus required for ejaculation is also quite variable. As a general rule, an animal whose penis has a considerable amount of erectile tissue, ejaculates on a combined temperature, pressure and friction stimulation. Those species showing a fibrinous penis with little erectile tissue will usually ejaculate on temperature stimulus alone. Others will ejaculate on both temperature and pressure, or in a few cases, on a pressure stimulus alone.

To further generalize, those species requiring pressure, temperature and friction require a longer period of stimulation to ejaculate, while those whose only requirement is temperature stimulation show a very short period of intromission prior to ejaculation.

Ejaculation and lubrication by the male are controlled by the sympathetic nervous system. Again, as with erection (under parasympathetic control) the autonomic nervous system is responsible for the coordination of the act of copulation. When external stimulation has reached a certain level, the sympathetic nerves in the hypogastric plexus show an increase in activity resulting in the contraction of the smooth musculature surrounding the vas deferens and the seminal vesicles. This forces semen (a mixture of seminal fluid and sperm) into the male urethral tract where parasympathetic nerves cause a rhythmic contraction resulting in the forceful discharge of semen.

Electroejaculation is a method for collecting semen for artificial insemination or evaluation. The reason it works is that both the parasympathetic nerves involved with erection, and the sympathetic nerves, involved with ejaculation, are in close proximity to the rectum. A probe is placed in the rectum, and low voltage, low amperage current

stimulates these nerves and results in the collection of a reasonably normal ejaculate.

For those who are purists, the act of coitus is a true reflex arc with very little upper neuronal control once arousal has been achieved. Animals who are spinal (have had the spinal cord severed in the neck region) are capable of erection, ejaculation and even pelvic thrusting. So, just like walking, the male is not required to consciously think about moving his hips; the body goes on automatic pilot and ejaculation occurs smoothly. This fact, however, would probably not protect the individual involved in a paternity suit who claimed "it was not my fault...my body just did it".



National Headquarters
National Zoological Park
Washington, D.C. 20009

FROM THE SECRETARY

Lee Glasco
Lee Glasco

Shortly after he took office as President, Bela Demeter realized that, if he was to do the job he wanted to, some sort of paid help would be essential. As your past Executive Secretaries can testify, there is an enormous amount of routine office work to be done, even in a relatively small organization such as AAZK. More often than not your Secretary found himself falling farther and farther behind as he struggled to keep up with applications, requests for information, correspondence, and policy matters, not to mention his regular eight-hour-a-day job.

Help arrived this past summer in the form of a grant from the Friends of the National Zoo (FONZ) for the purpose of hiring a part-time secretary. And, luckily for me, I was working as a Tour Guide at the Zoo and looking for just such a job that would allow me to continue Guiding.

As you probably realize, one result is that your President has been able to concentrate on organizational matters vital to the growth (and, perhaps even to the continued existence) of AAZK. Many of the policies he has set in motion, such as the system of regional coordinators, were thought of and discussed in the past, but the additional demands on you

your officers made implementation impossible.

Another result should be fewer delays in membership services...not only because I can give them the attention they deserve, but also because we have, at last, a permanent National Headquarters. Judging by the boxes of records that arrived here from various parts of the country, some of which had never caught up with the last move, I think it's a wonder previous administrations didn't throw up their hands in despair and head for the hills.

For that matter, we are still catching up with this last and final move. Understandably testy letters occasionally arrive from members whose

cards vanished down a hole somewhere and whose names dropped magically from mailing lists. These letters will continue to receive priority treatment, and with any luck we think the worst is over.

I am delighted to have this opportunity to thank all of you, through this newsletter, for your understanding and forbearance during this sometimes difficult and confusing transition. You have been remarkably patient and good-humored through it all, and I am enormously grateful.

NEWS ITEMS...Jill Grade is the new Election Committee chairman, and Rick Steenberg is the International Affairs Coordinator.

A Directory of members will be out sometime around next March. All members are encouraged to attend the AAZPA regional workshops in their areas. More, we would like members to consider presenting papers at these workshops. How about giving it some thought? The dates of the meetings are:

Southern...Little Rock Zoological Gardens, Apr. 17-20

Northeast...National Zoological Park, Apr. 3-7

Great Lakes...Indianapolis Zoological Park, May 2-5

Central...San Antonio Zoological Gardens, May 22-25

Western...Seattle Aquarium, May 8-12

Watch this newsletter for information on topics and registration. Again...we urge you all to attend. There will be many AAZK members attending the workshops, and it's a great opportunity to meet and exchange ideas.

One of our Canadian readers lost a 6-year-old female iguana to what the lab pathologist called gout. I think a lot of us have seen this and have wondered how common it was, what caused it and what we could have done to prevent it. Unfortunately, we don't have the answers to all this, but Mike Davenport, author of the following article, gives us some idea of what we're dealing with...

Gout in reptiles is a disease characterized by deposits of uric acid crystals in the joints of the body or in internal organs such as the liver, kidneys, heart, and main blood vessels. The form affecting the joints can often be clinically diagnosed and the symptoms can include swelling and pain there. The form affecting the organs is usually discovered at necropsy.

Gout is frequently seen in captive reptiles and is also reported as occurring naturally in them. This disease has not been well investigated in either case. Consequently, little is known about what factors cause gout. The etiology of this disease in captive reptiles is often attributed to excessive amounts of protein in the diet. Dehydration is also thought to be a cause. Visceral gout is reported in captive crocodilians. This leaves one asking why a carnivorous reptile which should have good access to water would suffer from such a condition. That is not to say that dehydration and high protein diets could not be contributing factors, but little or no investigation has been carried out on the effects of other dietary factors, microbial disease organisms, temperature, stress, etc.

This disease can be induced in reptiles. Some of the antibiotics frequently used in reptile medicine are nephrotoxic. It is recommended by some that when these drugs are used, the patient be hydrated to help prevent kidney damage. At the National Zoological Park, work is being conducted by Dr. M. Bush to help determine safe, effective blood levels in the use of the antibiotic gentamycin sulfate. The experimental animals used are bullsnakes Pituophis melanoleucus. Much work remains to be done on this subject as the results may not be applicable to the treatment of other species.

Gout is difficult to treat successfully. As many cases of gout take the visceral form which is usually diagnosed upon the specimen's death, preventative measures would seem to be the most the likely method to use when dealing with this problem. Ready access to water and balanced, natural diets are recommended to prevent gout. However, this may be difficult with many reptile species because their natural diets and nutrient requirements are poorly known. Until the factors which cause or contribute to gout are more thoroughly investigated, there is little hope that it can be successfully treated.

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DIRECT ALL COMMENTS TO R.A.P., DIVISION OF REPTILES AND AMPHIBIANS,
NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C. 20009

TORONTO KEEPER DIES

We regret to announce that Christopher James Beck, Animal Keeper at the Metro Toronto Zoological Society, Toronto, Ontario, a lover of animals, was accidentally killed, not by the animals he loved, in Toronto on September 18th. Any donations should, at his request, be forwarded to the Canadian Wildlife Federation, 1673 Carling Avenue, Ottawa, Ontario, Canada, K2A 1C4.

The American Association of Zoo Keepers and the staff of Animal Keepers' Forum extends their condolences to Christopher's family and many friends.

RESULTS OF ANIMAL KEEPER SURVEY II by Judie Steenberg, Part 1
Sedgwick County Zoo

Of 715 surveys mailed to members of the American Association of Zoo Keepers, subscribers to Animal Keepers' Forum and the keeper staff of a few selected zoo, 206 (29%) were returned. The surveys were from keepers and other personnel at 67 zoological institutions; 63 zoos, 1 aquarium, 1 museum, 1 science center and the circus store.

An interesting, somewhat unexpected fact emerged. Of the total number of surveys returned, 82 (40%) were from women.

Not all of the surveys received were from keepers presently employed in the profession. The breakdown was as follows:

- 182 presently working as keepers
- 8 formerly keepers (no longer in zoos)
- 2 recently moved into management positions
- 7 already at management level
- 4 volunteers
- 3 part-time and student/intern

The 24 surveys from people other than keepers contained the following information:

- 16 (67%) had previous animal experience (farm, lab animals, pet business, vet hospitals or zoos)
- 21 (88%) had some degree of college education,
 - 1...masters degree
 - 11...four year degree
 - 9...one to three years of college
- 18 (75%) were continuing their education
- 22 (92%) were members of AAZK...four for 8 years, three from 3 to 6 years, eleven from 1 to 3 years and four for less than 1 year
- 8 (33%) indicated they have attended AAZK Conferences.
Chicago was the most heavily attended
- 16 (67%) are members of AAZPA
- 15 (63%) are members of one or more wildlife organizations

Discounting the seven surveys received from students and volunteers, 11 stated they had a training program for new keepers. 7 said they had an on-going program for all personnel. On-the-job training was checked on fifteen of the surveys.

The section regarding previous experiences that were beneficial resulted in a variety of answers. Many surveys gave a combination answer with school and work experiences given as the most helpful.

The following statistics are from the 182 surveys returned by keepers presently employed in the profession.

EMPLOYMENT DATA

Number of years at present
place of employment:

under 1..	8	5%
1 to 2½..	64	35%
3 to 5 ..	51	28%
6 to 10..	35	19%
11 to 20..	17	9%
21 to 30..	7	4%

Title of present position:

Novice.....	8	4%
Keeper I.....	96	53%
Keeper II (includes Senior & Lead Keeper)	64	35%
Other.....	14	8%

The "Other" category included zoo management trainee, animal caretaker, ranger, attendant, trainer, journeyman, keeper supervisor, assistant lead keeper, assistant keeper and seasonal.

Regular.....	141	77%
Relief.....	31	17%
Both.....	3	2%
Not Indicated...	7	4%

The question "Do you work with a specific order of animals?" proved to be confusing and too restrictive. However, it was possible to glean some data from the answers given.

147 did not work with a specific order
3 gave no answer
32 do work with a specific order, 19 of which
work with primates

Other orders listed were; carnivora, artiodactyla, marsupalia and the falconiformes. Although many keepers listed birds, reptiles and amphibians as their specialities, it wasn't possible to use the data meaningfully.

105 keepers (58%) indicated some previous experience with animals. Some listed more than one kind of involvement.

30 worked with zoo animals.....17%
22 worked in animal hospitals...12%
15 worked with lab animals..... 8%
12 worked with farm animals..... 7%

Other categories were: educational training and volunteer work, government agencies, pet shops, personal pets and private collections, dogs (grooming, kennel work and training), horses (riding and training), cat breeder, psittacine breeder, museum live collections, farrier, falconry, naturalist and the circus.

PART TWO OF THIS ANIMAL KEEPERS SURVEY WILL APPEAR IN THE JANUARY, 1977 ISSUE OF ANIMAL KEEPERS' FORUM.

41st Wildlife Conference Transactions Ready Outdoor News Bulletin

Transactions of the 41st North American Wildlife and Natural Resources Conference are now available, the Wildlife Management Institute reports.

This year's 634-page indexed volume contains all the presentations and floor discussions at the general and technical sessions of the 41st program. The names of all conference registrants also are listed. Copies may be ordered from the Institute, 709 Wire Building, 1000 Vermont Avenue, N.W. Washington, D.C. 20005 at the cost of publication price of \$8.50 (postpaid)

26 PRIMATES DESIGNATED AS ENDANGERED OR THREATENED SPECIES

A recent survey by the U.S. Fish and Wildlife Service has resulted in a rulemaking published in the October 19 issue of the Federal Register. An additional 26 primates have been added to the list of threatened or endangered species. The action raises the total to 54. 12 species are being listed as endangered and 14 are being listed as threatened.

Ten of the species that are listed occur in Asia. Africa hosts 11 and Latin America has 5.

Ten Asian Primates...Military activities and other habitat disruptions have contributed to the decline of four Indochinese species. The destruction of forests for coconut, tea, teak, and rubber plantations was the major factor affecting six other species in India, Sri Lanka, Malaysia, Indonesia, the Philippines, Taiwan, and Japan. Collection for biomedical research, use of some species as food by man, and the pet trade also influenced these six species. The Asian species in the recent listing include:

Francois' leaf monkey.....	endangered
Lesser slow loris.....	threatened
Tonkin snub-nosed monkey.....	threatened
Stumptail macaque.....	threatened
Philippine tarsier.....	threatened
Formosan rock macaque.....	threatened
Japanese macaque.....	threatened
Toque macaque.....	threatened
Purple-faced langur.....	threatened
Long-tailed langur.....	threatened

Eleven African Primates...Extensive logging in a number of countries stretching along the western African coast from Senegal to Gabon in equatorial Africa is the principal cause of the plight of many of the primates. Being hunted for human food is a second factor. Further, a third influence is the collection of some of the more colorful species for zoological display in the west. In northeast Africa, intensive agriculture and settlement is forcing one species that occurs only in a small area of northern Ethiopia onto poorer quality land.

Some species are also being illegally collected and exported for scientific research. The 11 African primates included in the listing are:

Diana monkey.....	endangered
Red-eared nose-spotted monkey.....	endangered
Red-bellied monkey.....	endangered
L'hoest's monkey.....	endangered
White-collared mangabey.....	endangered
Black colobus.....	endangered
Mandrill.....	endangered
Drill.....	endangered
Gelada baboon.....	threatend
Chimpanzee.....	threatened
Pygmy Chimpanzee.....	threatened

Five Latin American Primates...The loss of forest to farming and logging is the principal reason for the decline of all of these species in the nine Central and South American countries where they occur. These countries are Mexico, Panama, Guatemala, Costa Rica, Colombia, Brazil, Peru, and Bolivia. The five species listed are:

Cotton-top marmoset	endangered
Pied tamarin	endangered
Yellow-tailed woolly monkey	endangered
White-footed tamarin	threatened
Lazy howler monkey	threatened

LOOKING FOR INTERESTING READING?

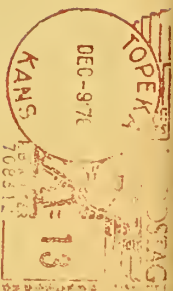
Look no further than the November issue of Natural History magazine. It's volume 85, number 9. The article is called "The Ape in Stateroom 10", by Kenneth A.R. Kennedy and John C. Whittaker. It is what is likely the first history written on the first gorilla brought to the United States. A photograph is even included. Look for it on page 48 through 53.

OH...AND HAVE A VERY MERRY CHRISTMAS!!!

AMERICAN ASSOCIATION
OF ZOO KEEPERS
National Zoological Park
Washington, D.C. 20009

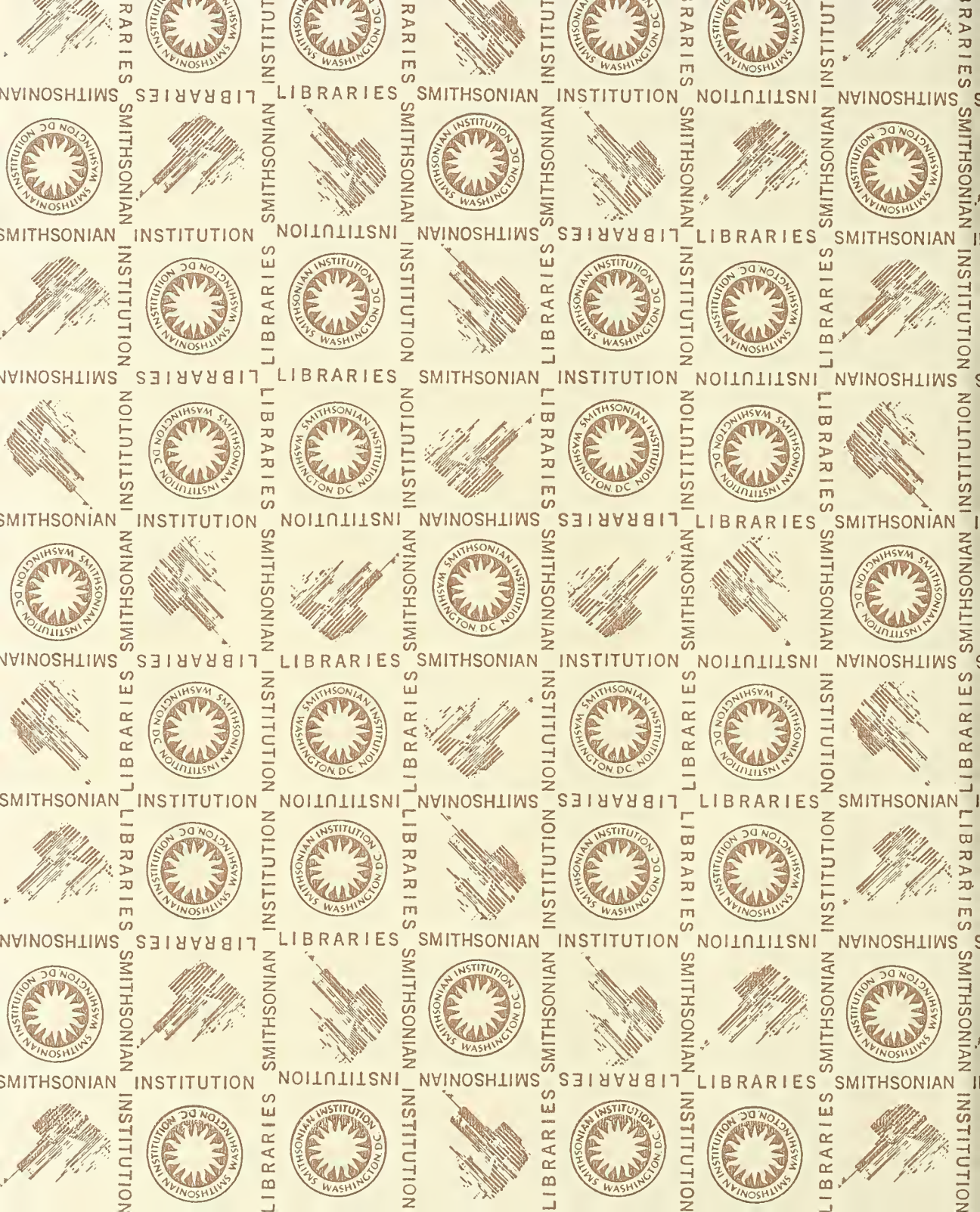


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